

# The Canadian Medical Association Journal



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# The Canadian Medical Association Journal

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## PSYCHOGENETIC CONDITIONS IN SOLDIERS, THEIR ÆTIOLOGY, TREATMENT AND FINAL DISPOSAL

BY COLIN K. RUSSEL, M.D.

*Temp. Major, acting Lieutenant-Colonel, C.A.M.C.*

ONE of the very serious problems we in the medical profession of Canada have to deal with in the returned soldiers is met with in the treatment and final disposal of those suffering from what I have called psychogenetic conditions from the Greek  $\psi\chi\eta$  = the mind plus  $\gamma\epsilon\nu\nu\alpha\omega$  = I beget, that is, conditions which are born in the mind. This problem is by no means confined entirely to the medical profession, as I hope to show you, but it is for us first to have a very definite idea of the problem before us so that we may use our professional influence in the right direction.

It is not advisable to go into the details of numbers and percentages of returned casualties who come under this category. You will take my word for it that the problem is worthy of our serious consideration when I tell you that in the French army such cases have practically disappeared, save for the acute temporary conditions which are treated in the casualty clearing line close to the front.

Psychogenetic conditions may be divided into two groups: (a) malingering, and (b) the neuroses. With regard to the first it is obvious that in one feigning disease or defect, his disability is begotten in his mind. He may feign paralysis or merely pain, or he may feign shell-shock and its varied subjective and objective

Opening communication of the symposium on the "Problem of the Returned Soldier," delivered at the Hamilton Medical Week, May 29th, 1918.

disabilities, or anything else. For the moment I do not propose to go into any discussion of this condition, save merely to point out that it has always been considered the old soldier's privilege to put one over the medical officer by an exaggeration of his symptoms in order to escape duty. One would be entirely lacking in a sense of humour if one took serious objection to this attempt, if not carried to extremes. In war, however, it is our bounden duty to see that the humour of the situation remains on the side of the medical officer.

In turning to the second subdivision of this great psychogenetic group, one must first state that while theoretically there should be a definite dividing line between those two subdivisions, in practice this is often difficult, if not impossible to establish. Let us then consider the group of neurotics, the real sufferers from a mental condition. These might be further subdivided into, first, those with a physical disability, and secondly, those whose complaints are purely mental; though I must say I have been struck with the futility of refinements of classification.

With regard to the former, the disability complained of may vary from the complete paralysis of both legs to a mere limp in walking, from a general trembling or most exaggerated shaking of the limbs to definite and periodical convulsive seizures—from a complete blindness to a complete mutism—from a pain in the back to an inability to stand upright; and one has rather been struck by the fact that these types are apt to appear in epidemics. Early in the war the "trench back" was very common. I have not seen a case for eighteen months or more. The symptoms, then, may be protean. The only point in common in all these cases is that no physical lesion can be found to account for the symptoms complained of. In the case of complete paraplegia there are no pathological reflexes and no bladder disturbances. In the case of the limp, there is no sign of an injury sufficient to justify one in believing it to be the sole cause of the limp; pain is complained of, but *x-ray* examination fails to reveal any bone lesion, and one cannot help having the feeling that if such severe pain as is complained of were really present for such a long time, something would be there to show for it. In the case of the general tremor, which is practically always volitional, there are no pathological reflexes and no suspicion of paralysis agitans, and it is not choreiform. In the convulsive seizures the movements are purposeful, thus distinguishing it from epilepsy; and while the face may become red it does not become cyanosed. The biting of the tongue and passing of urine

might be simulated, but as a rule the tongue is not bitten severely enough to cause laceration. The same thing holds good in those cases of blindness or mutism, no evidence of optic atrophy or paralysis of the vocal cords can be found. In fact these cases are what we have been accustomed to call hysterical, but for which Babinski has introduced the term "pithiatism" from the Greek word *πειθω* = I suggest, indicating that the incidence of the peculiar physical symptoms is due to the influence of suggestion on the individual's mind. Other so-called stigmata of hysteria may be found to be present, the peculiar areas of anæsthesia, and the contracted fields of vision, for instance; but particularly the increased suggestibility. In all genuine cases this latter symptom is always present and can usually be easily demonstrated and in fact these so-called stigmata are, as Babinski has shown, and my own experience confirms, merely evidences of it.

Of course, one must appreciate the fact that just as hysteria can simulate an organic paraplegia, it can also simulate any psychopathic disability.

The second subdivision—those suffering from purely mental symptoms—might be divided into psychasthenics and certain types of psychopaths.\* These groups are, however, in my experience relatively unimportant, from a military point of view. Their numbers are relatively small, and I am of the opinion that the war has not been responsible for the initiation of the great majority of them. They are, as a rule (Farrar states in 90 per cent.) an aggravation of a preëxisting condition. It is the first two groups, and particularly the second, which have been greatly added to by the war, and which form our present problem; and I wish to repeat that these two groups merge the one into the other. Of course there are some—fortunately few—who are definitely malingerers, and there are others who are definitely hysterical, where there is no room for doubt; but in which group could either of the following cases be put?

Private McK. was admitted complaining of blindness in both eyes, paralysis of the left arm, weakness of the left leg, all of which he stated he had had for six months, following being buried. His occupation in civil life had been as a medical student at Johns Hopkins Hospital, and he had been eighteen months at the front,

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\* Neurasthenia should not be considered as a psychogenetic condition. I would consider it rather an organic nervous exhaustion, either as part of a complete exhaustion due to prolonged strain, or the nervous exhaustion due to the reflex irritation of the nervous system caused by organic disease.

he stated. My suspicion was aroused, after I had examined him and found no evidence of organic lesion, by the fact that he came to us from the National Hospital at Queen's Square, where I knew it was not the practice to send out such functional cases with their disabilities still present. I should have said he had a complete loss of sensibility to pin-prick over the left hand and arm up to the shoulder joint.

During my first talk to him in my examining room he suddenly uttered an exclamation and regained his sight and power in the left arm and leg, and I sent him to duty around the hospital. A week or ten days later, however, after his affectionate advances had been rather violently spurned by a Ramsgate lady, he came to the examining room apparently quite blind again. I was not altogether surprised, as the young lady's mother had previously consulted me in the matter. As a matter of fact, when he was warned of the danger of the game he was playing, it did not take him many minutes to regain all his faculties, and he was sent to duty in France. His whole story was a tissue of lies. He was not a medical student, and I afterwards learned that when he left Queen's Square, he had no disability at all; he must have developed it on his journey from London to Ramsgate.

Another case of Private R., who was admitted with his right leg completely paralyzed and the left partially so. He had been using crutches for six months and had developed a wrist-drop of his right arm which he thought was due to the crutches. Examination showed the leg swollen and cyanosed, and with complete loss of sensibility to pin-prick extending up to the hip joint. There was loss of sensibility also in the right arm to the elbow joint. No evidence of any organic lesion could be found. After being told that his disability was purely mental, he confessed that it had commenced with a pain in his knee; that he had not used his leg as much as he might have. He stated that he had not done this on his own account but on account of his mother who, sometime after he enlisted, had been left alone and unprotected by the enlistment of his two brothers. He had wanted to get back to her. He stated that in a short time he found that he was unable to move his leg, that his left leg began to become affected, and he had to take to crutches. These very soon caused a crutch-paralysis to develop. Just that morning he stated he had tried to use his limbs and had been unable to do so. He walked out of the examining room perfectly well, and has remained well ever since. In fact, I recently saw that he had obtained a commission.



Evidently in the first case, we have a condition of malingering on a basis of hysteria, and in the second case we have hysteria on a basis of malingering.

I wish to record here some ideas, on the differentiation between psychogenetic conditions of the malingering type and those of a more genuine and sincere type, which evolved during my period of duty as neurologist in charge of the Granville Canadian Special Hospital, and it may be interesting to follow the way in which they evolved.

Certain of these psychogenetic cases I just naturally treated with military sternness, and without much apparent sympathy, simply making them do what they said they could not do, but for which of course I knew there was no organic cause to prevent them. Others I took sympathetically and led them along with reason, persuasion, and encouragement. When asked why I made the distinction I could only answer at that time that my experience had taught me which was the way to take them. As a rule, whichever method I used, worked well. Realizing there must be some underlying reason for the difference in methods, I was led to the following, after reading William McDougall's "Social Psychology".

We have noticed in all these genuine psychogenetic hysteric or pithiatic conditions there is a greatly increased suggestibility which has been produced as a result of the terror under which they have laboured. McDougall, in discussing the emotions of admiration and awe, shows that under the influence of either there is an increased suggestibility. In analyzing these emotions he shows that admiration is made up of wonder plus what he terms a negative self-feeling—a feeling that we are in the presence of a superior power, something greater than ourselves. Certainly we are all in a more suggestible state of mind towards one whom we admire than towards one whom we do not, we are more likely to be influenced by his words or actions.

In the same way in his analysis of the emotion "awe" he shows it to be made up of a negative self-feeling plus wonder plus a suspicion of fear. Under the influence of "awe" we are more suggestible.

Terror, on analysis, is made up of fear with a much exaggerated negative self-feeling element, and here too we have found the increased suggestibility.

In all three emotions we have found the resultant increased suggestibility and the only common factor on the other side of the equations is the negative self-feeling. Therefore the negative self-

feeling must be the cause of the increased suggestibility. When, therefore, I see a man with a psychogenetic disability who is unreasonably antagonistic, self-assertive and inclined to be impudent, I realize that that man has not the negative self-feeling one expects to find in a genuine case, and I feel he is more of the malingering type and trying to deceive me which one naturally does not knowingly permit. Not only that, but to treat these cases efficiently, it is necessary to inspire that necessary negative self-feeling and the consequent increased suggestibility essential in these cases to a rapid recovery. From this one can estimate also the harmful effect of unrestrained emotional sympathy towards these patients. Its tendency will be to produce a positive self feeling which will render attempts at treatment in many cases futile.

It is unnecessary to quote cases of uncomplicated hysteria, such as a man who was admitted with a complete paralysis of both legs which he had had for sixteen months and which had necessitated his being carried around on a stretcher for that period, who nevertheless was made to walk perfectly inside of an hour. Such cases were not at all rare. It is interesting, however, to try and work out the reason for the development of such conditions. To do so we must go back to the primitive beginnings and consider the primitive instincts. We must first appreciate the fact that an instinct is a primitive innate tendency. There are two essentially primitive instincts; the instinct of self-preservation, and the instinct of procreation. These are primitive; they must have been present in the early beginnings of animal life. Their absence in an individual would certainly have assured his not being represented in the present generation. These instincts are born in us. They are tendencies, that is, a constant leaning or urging in a certain direction; and it is only relatively late in the development of man that he has, with the development of his larger brain, learned by experience to control the urging of these instincts. Their urging is, nevertheless, constantly present, and at times, it becomes insistent.

If in an individual there has been a lack of development of the higher centres producing a condition of mental deficiency or feeble mindedness, it will be readily seen that there will probably be less control of these instincts and their peculiar emotions, and in fact it has been found that it is a bad economic proposition to spend time and money in endeavouring to make soldiers of this class of individual. A certain number of these individuals were enlisted during the voluntary enlistment period owing to the enthusiasm to fill up the ranks of a battalion, and many of them have come back diag-

nosed as "shell-shock". We must also recognize the fact that as the necessary mental control involves effort which might be compared to a physical effort, in that it produces physical fatigue, and as we all have our individual physical limitations, there comes a time when this effort becomes wellnigh if not completely impossible. For example if a man has stood the strain for six to eighteen months in the line, I personally do not feel like criticising him for losing his control under exceptional conditions.

When a soldier is first introduced to the fighting line, or even under the apprehension of that danger, his instinct of self-preservation will be strongly stimulated, and he will suffer from the emotion peculiar to that instinct, namely, fear. That is natural. Ordinarily the discipline he has learned and his own self-respect are sufficient inducements for him to exert his intellectual power in controlling the impulses set up by his emotions. This intellectual power is, as I have said, a more lately acquired faculty and is more subject to local influences. Lack of sleep or food, or the general malaise associated with a fever, or anything else that interferes with his feeling of well-being, will lessen his intellectual control. Under such circumstances, the sudden onset of some great danger or horrible experience will stimulate his primitive instinct of self-preservation, whose centre is probably in the basal ganglia. The radiations or impulses set up by the stimulation of that centre, like the radiations from a powerful wireless station, jam the radiations which are set up in the relatively weakened cerebral centres, so that their message can no longer be read. When one sees a man pulling his rubber sheet over him to hide himself from the shells, one realizes that here is a vivid example of the old instinct of flight and concealment, and that such an individual's higher centres are not acting as they should. Under such circumstances, in the absence of the censor as it were, that individual becomes very suggestible. He is in a mental condition ready to believe anything, especially anything that will relieve him of his fear and relieve the anxiety of his guardian instinct of self-preservation.

In studying cases of mutism, for example, one is led to the following interpretation: one realizes that there is a very close association tract between the emotion fear and the voice centres. If a child is frightened, it cries. The warning cry of animals is the cry of fear. Under intense fear the natural reaction is to cry out. Fear is often so intense that the individual cannot cry, his throat muscles having gone into spasm owing to the strength of the stimulus. When, however, that fear is passed, on the individual attempt-

ing to use his voice, owing to the close association tract already mentioned between the voice centre and the centre of fear, there is immediately called up in his mind the picture of the extreme terror he was under. The mind has a natural protective method of suppressing anything that is unpleasant. If one has a recurring unpleasant thought, he will immediately think of something else. He will shove it down out of consciousness. So in this case the thought of the terror being decidedly unpleasant, the mind suppresses it, and with it the voice—so that it will not be recalled.

In the same way the functional paralysis of the arm may result from an injury received when the individual is suffering from great emotional strain. The natural reaction to fear, the quickening of the heart, the shaking of the knees, the profuse perspiration, the involuntary micturition, strange and unaccustomed symptoms to the ordinary individual, become very potent suggestions of organic disease.

Take, for example, the man who after a week with his battery was returned to the special shell-shock hospital suffering from general tremor. When asked what he complained of, he stated that his "nerves were broken", that he was not strong enough to stand the life. When asked if he had been afraid, he asserted rather violently he had not—he had never been afraid of any man. When it is explained to him that his nerves could not be broken, that he really meant that he had lost control of himself, he asserted that he was not strong enough to stand the life owing to the fact that he had heart disease, and that if he had been examined by the medical officer he would not have been sent to the front on that account. Examination of the heart showed it perfectly normal and on being assured of this, he stated that in any case he had done "his bit", and he should not have to go back to the front. He had done fourteen months' duty on the coast defence in England, and he had taken on this position in the early days when there was little or no protection and he had been exposed to all sorts of weather and hardships. When he received the assurance that we did not criticize anybody for being afraid, that it was a very natural phenomenon, he then admitted that he did have his wind up, and in fact he had been very much afraid.

If one analyses this case one sees the natural reaction of the mind in suppressing the unpleasant truth that he was afraid. He violently asserted that he was not afraid of any man. One sees also another natural reaction on the mind in defending the individual to himself. His first defence was that owing to heart disease he



was not physically strong enough and when that was put out of court, his second defence that he had already done "his bit", and that he should not be called upon to go to the front. When it was pointed out that it was hardly just to compare fourteen months on the coast defence in England with fourteen months in the front line, as many of his fellows in the battery have done, he rationalized his whole condition and was in a position to appreciate the injustice of leaving other men to do his share who, though just as much afraid as he was, were controlling their emotions effectively.

One will appreciate that in order to make an individual thus rationalize his ideas and then appeal to his higher control, one takes for granted that he is a man of average amount of intelligence. In the case of the feeble minded, such a method is hopeless.

When one realizes the numberless sources of suggestion, one can appreciate how protean may become the character of the symptoms.

In the treatment of these cases a thorough knowledge and examination of the nervous system is necessary to exclude any organic disease. With the assurance that there is no organic disease present, a broad human charity and a personal interest in the explanation of the individual symptoms are essential. The patient must be made to understand the causative factor played by the primitive emotions, and he must be made to rationalize the ideas which have been set up. In this way his discipline, his self-respect, his higher control can be called upon to take command again.

In this way only can such patients be cured. Any methods of suggestion are insufficient, simply diverting as they do the patient's ideas. Hypnotism which is merely induced hysteria, cannot reasonably be expected to cure; it is granted that by this means the symptoms can often be relieved, it is, however, by super-inducing a further condition of hysteria, and the probability is relapse on the first moment of strain and emotion. His condition and disability depending entirely upon ideas, cannot be influenced except superficially by drugs or mechanical treatment. Reason is the only thing that will appeal to or change ideas.

If functional paralysis of a limb be present, it is a simple thing to show him by means of a strong electric current suddenly applied that he has got voluntary power in the limb—once having seen this he will call on it. In the same way the voice can be shown to be unaltered. In cases of tremor, once the real origin of the trouble is accepted by him, if the patient is persuaded to relax the muscles, the tremor ceases. One always notices that these patients when

endeavouring to control the tremor put all their muscles tense, which simply serves to increase it.

When a patient is diagnosed as psychogenetic, one should use equally scientific rational methods with him as one would in the case of any bacterial infection. If the patient comes complaining of loss of appetite and on examination one finds he has typhoid fever, one does not treat the loss of appetite. One tells him frankly he has typhoid fever and gives him treatment which has been recognized as reasonable and proper from a knowledge of the pathology of the disease.

If a man complains of a pain in his back and after the most thorough examination we can find no organic disease, we decide it is a neurosis, *i.e.*, it is mental in origin. Surely it is not the part of science to give him a plaster jacket. Such action will simply impress on the patient still more deeply the idea that he has an organic lesion, and make it more difficult to eradicate.

It is evident that the final disposal of the man and his expectation as to pension will have a decided influence on his condition. If by his disability he is going to escape future danger; and is going to receive a more or less satisfying pension, and his future is going to be cared for without any work on his part, he has small inducement offered to him to make the effort to use his higher control. In the French army this has been recognized and their ruling now is that hysterical disabilities will warrant no pension, no gratuity, and no discharge from the army, that where a definite wound is associated with hysterical disability the latter must not be considered in estimating his pensionable disability, and in no case does such functional disability warrant discharge from the army. The result of the putting into practice of this legislation is that it is not worth while to develop shell-shock in the French army.

It is worthy of notice that so called shell-shock is not observed among our German prisoners. These men have been under the same strain and exposure that our men have been subjected to. The only difference is that, they, being prisoners, know that they will not be again called upon to enter the firing line and they are no longer under any apprehension of danger. Their instinct of self-preservation, in other words, is at rest, and there is no question of pension to have its influence.

In England, on the other hand, a very different state of affairs exists, and it is only recently that efficient methods have been adopted to treat these cases in special hospitals. Previous to that many were discharged to civic life with a fairly big pension. It

was a common experience that even in civic life many of these were inefficient.

Sitting on the special medical board which dealt with these cases one would see men who had been discharged some months to their own control, who had again become total disabilities. Let me quote two typical cases: One had been discharged from the hospital to return to his command depot. On the train while leaning out of the window an engine in the neighbourhood whistled. He immediately fell back in the compartment, shaking all over, and was returned to the hospital a complete disability.

Another who had been discharged to civic life and had been carrying on for some months, while in Paddington Station one day there was an air raid warning. Everybody moved towards the underground, this man with the others. An engine in the station whistled: in his own words, he fell down in a severe hysterical convulsion. Somebody threw him into a baggage car, and the train ran out of the station. Its first stop was at Taplow, and he was taken off and sent to the hospital there. When seen, he was walking with crutches, dragging his legs behind him.

In neither of these cases was there any sign of organic disease found. They had been startled by an idea and had lost control of themselves. Being a pensioner, this latter patient would be advised to go to the first home of recovery, a fine old house in beautiful grounds with a fine billiard table and interesting occupations found for the patients. While there he would be receiving 27s. 6d. a week, with 13s. for his wife, and so much for each of his children. He would live there for six weeks or two months like a gentleman of means, well cared for and well fed, and with an interesting occupation. At the end of that time if sufficiently recovered he would come to the special medical board and might well receive an increase to his pension on account of his nervous instability. Now, we saw in the first place that his condition was due to an idea, and we must realize that only reason will appeal to an idea. If all the reasons that are being given a man are such as to encourage him in his condition, it is hopeless to expect that his ideas will be influenced beneficially.

It therefore seems to me essential that in dealing with this type of case in Canada we must first of all follow the plans which have been adopted in the French army, and in the British army in France. We must have special hospitals where these patients will be segregated immediately on their arrival in Canada. These centres will be under the supervision of specially trained men;

secondly, that no patient showing gross objective functional disturbance shall in future be discharged from the army; thirdly, that such psychogenetic conditions shall not warrant any pension or gratuity; fourthly, in the event of such patients relapsing in their condition after their discharge from the army, they shall be returned to the special neurological centre from which they were discharged.

In psychasthenics, where pre-war disability can be demonstrated—and Captain Farrar states it can be so in 90 per cent. of the cases—it should, by appropriate treatment, be reduced to as near the pre-war disability as possible, and they should be discharged without pension or with pension covering the estimated amount of the aggravation.

With the carrying out of these recommendations one could justifiably hope for: first, the return of a greater number to military duty; secondly, a greater efficiency in civilian occupation in those discharged to their own control; third, a very decided diminution in the amount of pensions.

With regard to the feeble-minded to whom we have made reference. One recognizes that this condition of mental deficiency was not induced nor aggravated by military service in the great majority of cases. In what way should they be disposed of? When discharged, many of this type drift back to the hospital for a while at least, usually on insufficient medical grounds. While we recognize that this disability does not warrant a pension, it is my opinion that from a national economic point of view, the state should become the guardians of such individuals. They should be collected into colonies where they might be made partially self-supporting at least, under supervision, otherwise they will become the tramps, ne'er do wells and criminal class always so greatly augmented in the train of war.



## CHIRURGICO-ORTHOPÆDIC OBSERVATIONS AND THE MORAL TREATMENT OF THE WOUNDED MAN

BY COLONEL IRVING H. CAMERON, C.A.M.C., C.E.F.

FOR four and forty years I have been coming to these meetings and in the early days Osler was Secretary of the Canadian Medical Association, and, with his encouragement, I spoke much and oft, fuller of speech than thought, but "the years which make the stripling wise" were not slow to transmute with radiant energy the so-called silvern speech into golden silence. Johnson tells us of another unfortunate whose silence is commendable, as I have long felt mine to be, when he writes:

"Superfluous lags the veteran on the stage,  
Till pitying nature signs the last release,  
And bids afflicted worth retire to peace!"

And so, Mr. President, I do not come here to-night *mea sponte mera*, to break the silence I have long preserved, but by command of my respected chief, the D. G. M. S., "to show his love and friendship to you," and in his name I give you greeting.

I see that I am set down to make some general surgical observations with special reference to orthopædics. What I would wish to say upon this subject has been already recently and better said by Captain F. C. Kidner, of Detroit, in giving an account of the work being done at the orthopædic centre at Shepherd's Bush in London, with its eleven hundred beds and excellent equipment under the control of Sir Robert Jones, which account is published in the *Journal of the American Medical Association* in its issue of April 27th last. I shall therefore refer to it only in the briefest possible way, and then say, with your permission, a few words on a branch of the subject more directly germane to the symposium on the Returned Soldier Problem. Possibly you will pardon me—and I shall make that assumption until called to order by the Chair—if I make an allusion in the beginning to the word "Orthopædic."

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From the symposium on the "Problem of the Returned Soldier", delivered at the Canadian Medical Week at Mamilton, May 29th, 1918.

And here, upon the "rim" I regret to find myself separated *dimidio caelo* from "the Hub," for the *American Orthopædic Association Journal* (Boston), has, if I remember rightly, an indication on its front cover page, that they derive it from the two Greek words, ὀρθός = straight, and πούς = a foot. Now while this might do very well for the days of the small beginnings when tenotomy for club foot, and occasionally for contracted knee or hip or torticollis, was the chief operative procedure in orthopædic surgery, yet when, later on, the other congenital or early acquired deformities of children, and particularly the tuberculous joint affections and paralysis of the extremities and spine were added, the ground became too large for the "foot" to cover and the root was shifted to παιδικός = pertaining to a child and ὀρθόω = I set upright (one fallen), rebuild, restore. But in these days of "vaulting ambition", when the tail sets up to wag the dog, if the orthopædists want to chew what they have bitten off, they will have to adopt and make good *my* etymology of ὀρθως = rightly and παιδεύω = I rear, educate, train or bring up. It is interesting to note, in passing, that Herodotus speaks of ξύλινος πούς = a wooden or artificial foot; but, possibly, he refers only to a "peg leg", one of the best and most useful and least costly substitutes to be found.

Fifty years ago orthopædic surgery received an impulse of development by the advent of Sayre and the two Taylors (*Pater et filius*) in New York, and Bauer in St. Louis, men of force and enthusiasm, and, as an old pupil of Lewis Sayre, I cannot forebear expressing regret at the extinction of the type of such strong and sturdy men and keen and forceful preceptors. On "the Continent" there were some strong exponents of the reviving spirit, and, in England, Little of Bristol, and Adams, Barwell and Bampffield, Roth and Heather Bigg and Howard Marsh in London, and Thomas of Liverpool were varied types of the chief masters of the art, but "it was nothing more", lacking pathology, for the "pallid bust of Pallas", Minerva, had not then cast either her light or her shadow on the handicraft. But the dawn was breaking.

These men, *et hoc genus omne*, were great surgeons too, and each contributed from his general experience some special ray of light upon the problems, and all had force and faith, merit and ability; but to America, I think, we must award the palm for the initial impulse which has transformed the scene and caused the tillers of a corner of the field to usurp the whole. For what do we find to-day under Robert Jones's generalship and strategy? Listen to his "Classification of Orthopædic Cases" in the British army:

1. Bone lesions; ununited and malunited fractures.
2. Nerve injuries, complicated by fractures and contracted scars, including nerve suture.
3. Acute and chronic disabilities of joints, including ankylosis, and loose or fractured semilunar or other cartilages.
4. Injuries of muscles, ligaments and tendons, and stiffness of joints.
5. Deformities and disabilities of feet, such as hallux rigidus, hammer toes, metatarsalgia, painful heels, flat and claw feet.
6. Cases requiring tendon transplantation and other measures for relief in the irreparable damage of nerves.
7. Cases requiring surgical appliances. And in Canada, owing to our peculiar and advantageous conditions, Lt.-Col. Clarence Starr has contrived, and the D. G. M. S. has connived, to add an eighth including,
8. Amputations and stumps requiring trimming and fitting with artificial limbs.

On contemplation of this very formidable list it does not occur to one that the professors of capacity and ability to reëducate, rebuild and straighten out all these crookednesses and defects and deformities and to set the victims of them upright on their feet again can be suffering themselves in any wise from deficiency or defect in nerve or bony framework; but, on the other hand, one must be convinced that they measure up pretty well to the standard of a man, capable of undertaking the work of a general surgeon.

And knowing both Colonel Robert Jones and Lieutenant-Colonel Clarence Starr intimately and well, and recognising to the full the sufficiency and efficiency of each (*capax, perspicax, sagax et efficax* as each is) I am content that they and all whom they can bring up to their level should till the whole field that the handicraft of surgery can cover, with the aid of all the ancillary sciences combined with the arts and crafts which go to make the *mens sana* and the *manus medica*—the just judgement and the healing hand.

The article of Captain Kidner which I have mentioned gives abundant illustrations, and I feel that I must refer you to it instead of quoting from it as I hoped to do had time sufficed. And very likely my surgical colleague who follows me (here as he did at

Orpington) may make reference to it.\* But the whole story reiterates and reinforces the dictum of Matthias Mayer, himself a veritable orthopædic surgeon, when he declared "*Simplex sigillum veri*" (as witness the peg leg and Thomas's splint). Simplicity is the seal of truth; duplicity and complexity are the zeal of error.

But, not to exhaust your patience on half my theme, let me now take a hurried glance at the returned invalided soldier question, and it is my intention to view it from the critical, the unpopular and unfashionable viewpoint. In a speech by Mr. Elihu Root, at Convocation (University of Toronto) the other day, I heard him reaffirm and assert the sovranity of the individual as opposed to the State—the heresy and error of the radical political economists of England (mostly Scottish, as usual) of the eighteenth and nineteenth centuries. The returned soldier, like Mr. Root, holds to the doctrine of the supremacy of individualism, which is worse than Bolshevism. He thinks his obligation to the State is settled and ended, and that the State owes him everything, unmindful of the basic fact that the State does not, and never did, owe him anything except equality before the law, and equal rights with those similarly circumstanced with himself—an obligation which it still acknowledges and still discharges. The absolute liberty of the individual began to wane in the nomadic and patriarchal state of society and has been diminishing ever since, to reach extinction when the commonwealth is at war and its existence jeopardised, at which time considerations of the public weal over-ride all others, and even the voice of the civil law is suppressed, amid the din of arms (*silent enim leges inter arma*). Because this essentially sound doctrine has been pushed to an unjustifiable extremity in Germany is no reason why Bolshevism and anarchy should be set up here. For all extremes are errors, the truth usually lies between, and Germany's present efficiency is the proof of which extremity is the lesser evil in a State, if we must tolerate "the falsehood of extremes".

Let us not mince matters, and let us look the situation squarely in the face; and, be it remembered, that, in the Army Medical Service, we are dealing with the maimed and the enfeebled, the mutilated and the exhausted, the malingerer and the evader, and so may easily acquire an exaggerated notion of the shirking and the pusillanimity of some of our Canadian youth, so many of whose

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\* Captain Kidner's name creates a prejudice in favour of his article because we know how full of energy and information his homonym is in the I. S. R. and therefore expect great things to be associated with it. Those of you who have not read the article will find it well worth perusing.



comrades have given proof of courage and endurance, of chivalry and devotion never exceeded in the annals of the race.

How many returned soldiers does one meet anxious to go back to the fighting line, to relieve or to reinforce the comrades they have left behind? How many does one see anxious to promote by every means their speediest recovery so as to be able at the earliest possible moment to join the army of industrial workers who provide the material sinews of the war; or even to do a day's work or earn an honest livelihood to render them independent of maintenance by the State? In your experience are they few or many?

If many, how shall we account for this decadence of manhood, this laxity of moral fibre, this vanishing virility?

I lay it to the charge of a sickly sentimentality. Self-com-miseration is inherent in and natural to us all, and has no need of cultivation or reëducation; and she was a wise, if a Spartan, mother of heroes, who in the golden age of Greece could give her son departing to the wars a shield coupled with the injunction to bring it back victorious or come upon it; "*ἢ τὰν ἦ ἐπὶ τὰν*," she said. A world of meaning in those five words, and second only in their wealth and burden of pathos to those two uttered by the Greek father—you will find them in the *Cædipus* of Sophocles, but they are also written large in the family annals of to-day—when he found his son numbered with the slain: *Ω παῖ!* My son, my son!

Let us take an other example of "the brave days of old" as Macaulay calls them, and summon back an instance of 458 B.C. to contrast with these degenerate days. The Roman army under Lucius Mincius is caught in a deep defile of Mt. Algidus by an *Æquian* host, and its doom seems sealed. A meeting of the Senate is hurriedly summoned and delegates despatched to Lucius Quinctius Cincinnatus, whom they find calmly digging in a field on the other side of the Tiber and tell him that the Senate has named him Dictator, and that he must proceed forthwith to succour the entrapped army. Without parley or ado he gathers his reinforcements and proceeds upon his mission. The *Æquians* are routed and the Roman army saved, and Cincinnatus returns to Rome and lays down the Dictatorship and is back on the farm in sixteen days—

From the field of food to the field of fight,  
And back to the farm in a fortnight's flight.

This, indeed, is an incident to point a moral as well as adorn a tale. Are there any on our farms now anxious to take the field to relieve the war worn heroes in the trenches? Five thousand agriculturists

invade the Senate house and blatantly demand an opportunity to answer "No"; and "Shout in Folly's horny tympanum such things as make the wise man dumb". How many who now "see Death entrenched preparing his assault" would gladly seek the furrow with the plough, but delay, when they do return, to fill the places which conscription has made vacant in the ranks of those who fought the enemy, no less, when they fed the allies with the forced labour of increased production?

Can you divine the cause? These heroes of ours went boldly forth to war, instinct with the spirit of freedom, each with Mr. Patrick Henry's sentiment in his mouth: Give me liberty, or give me death! They followed the Apostolic injunction to the letter: they quitted themselves like men; they were strong to endure, many to die! For, as Dryden has told us:

The love of liberty with life is given;  
And life itself the inferior gift of Heaven.

The strain to which they were subjected, the descent into Hell, naturally tried to the uttermost the "distracted globes" in which reason and self control erstwhile had residence and made them supersensible to self-suggestion.

They return, many of them, wounded and broken men—but men. But men made supersensitive to suggestion of the false and suppression of the true, with morale depressed.

And how are they treated? Sensibly and rationally enough until they reach the Base. And then, Presto, change!

No sooner are they transferred from ambulance to bed than well-meaning, but too sympathetic padres and matrons, nursing sisters and V.A.Ds., surround them with cigarettes and matches (hairs of the dog which has already bitten them to distant, perhaps, but untimely death) and with creature comforts, sedulously and emulously endeavouring to anticipate every want, but never forgetting or omitting "the accursed weed". And, as if this were not enough to disturb the balance of a mere and common man, the next day and the following days, *ad infinitum*, so many ladies of high degree, of wealth and fashion, so many men of eminence and attainment in church and state, put themselves and their belongings, their houses, chattels, goods and gear at the service of these unfortunate men that they naturally and inevitably begin to think more highly of themselves than they ought to think for having done their duty, however nobly. And Plautus has said: *Is est honos*

*homini pudico, meminisse officium suum.* "To a modest man, it is an honour sufficient to have remembered his duty." But it is nothing more. It were a disgrace to neglect it.

Thrice have I seen wounded men die with lighted cigarettes between their fingers, and these, of course, were none the worse; and three times have I known other three smoking surreptitiously at night, in bed, what Burton in his "Anatomy of Melancholy" has called "this damned, devilish, hellish" incense. Add then to this the ridiculous editorial laudation, and the effect of the absurd and extravagant speeches made on the floor of Parliament, and the irrational and inordinate claims at times advanced by various organizations for patronizing the returned soldier, and given a nervous system made over-susceptible to suggestion—hypnotized or mesmerized or Braidised or what you will—and with its own inherent saving common sense starved by disuse and choked by eulogy, and what more logical "conclusion to the whole matter" can we expect than that which we find?

In the strong Saxon speech, then, of one of my colleagues, Highlander though he be, gifted with more common sense than most of us, "Cut it out"!

Cut out Venus and Bacchus Let their shrines be empty! And here grant me the favour of, a digression suggested, nay compelled, by this chance reference to Venus and Bacchus, inseparable in my mind henceforth "while memory holds her seat in this distracted globe" from association with one of our best and brightest, "sanest and most obedient" to the highest laws of life, as wise as he was witty, as competent as clear sighted, as devoted to duty as dearly beloved of gods and men, whose clarion call to those who "carry on" graces and sanctifies your programme's page to-day after that long roll of worthy names to which with averted heads and hands thrice filled with dust we answer, sorrowfully, yet proudly, "Dead on the Field of Honour!" I refer to our deeply beloved colleague, the late Lieutenant-Colonel John McCrae.

But to my story: The scene an ocean liner; the subject the Greek Anthology, picked up by one of us in Glasgow; *personæ*: three friends, a clever classical lady from Kingston, Lieutenant-Colonel John McCrae and the narrator. The object: Amusement. The means: Translation of *Rufinus's "Love and Wine"*.

Professor Mackail's translation (Professor of Poetry at Oxford) follows:—

"I am armed against Love with a breastplate of Reason, neither shall he conquer me, one against one; yes, I, a mortal will contend with him, the Immortal; but if he have Bacchus to second him, what can I do alone against the two?"

John McCrae's rendering, extempore and impromptu:—

Me, a mortal, single-handed,  
Love immortal can't subdue;  
But the God with Bacchus banded,  
Cuts my breastplate Reason through.

And now to conclude, at a long last, my rede upon the Returned Soldier Problem, is:—

Cut out Venus and Bacchus. Cut out adulation and flattery; and undue praise. Speak the words of truth and soberness. Take the advice of Homer, and cut out the sophistries and euphemisms in which "Follies are miscalled the crimes of fate". Combine work and play, pleasures and exercise. Lead thoughts along the lines of cheer and hopefulness, and banish melancholy. Cut out indulgences, cultivate thrift, temperance in all things and sobriety in judgement. Cultivate "honour and clean mirth" amongst the men. Assist the returned men to develop their own self-respect, and spirit of independence and self-help; and eschew sentimental mollycoddling. Teach and help the men to investigate conditions and understand them before assuming that the authorities are in the wrong. Regard them as younger brothers and reprove them with sympathy and understanding accordingly. Encourage them to avoid and to despise, as unworthy of men, all trashy and solacious literature, and to read books which are at once useful and entertaining, through biographical association and illustration, such as Samuel Smiles' "Self Help," "Character," "Duty," "Thrift," and such like; books which they will finish with enjoyment if they begin them, and which John Murray publishes at a shilling apiece. Books which I have not found in any hospital library from ocean to ocean, nor on the bookshelves at Ottawa. Substitute for inane and silly moving pictures and trashy plays films of natural history and such like topics, and illustrative lectures which embody and improve the advice, "Go to the ant, thou sluggard, and learn wisdom; and to the bee and get understanding." Teach the men by counsel and example to prefer "the things which are more excellent." Likewise, and by the same means, inculcate the old Stoic doctrine of the essential necessity of "self-reverence, self-knowledge, self-control, which three alone lead life to sovereign power; yet not for power; power of herself would come uncalled for, but to live by law, acting the law we live by without fear, and, because right is right, to follow right were wisdom in the scorn of consequence." But if this ideal seems to them too high, then let them take Matthew Arnold's "*Second Best*" and make it their own, incorporate in their daily life.



## THE SURGERY OF NERVE INJURY

BY HADLEY WILLIAMS, M.D., F.R.C.S.

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A PERFECT nerve supply is so important to the individual that when a large mixed nerve of the arm or leg is badly injured (such as the sciatic or musculo-spiral) the disability is at once severe and, until rectified, the limb practically becomes useless. Realizing that there are many types of injuries, from simple bruising, to complete division, as well as involvement in scar tissue, callus and the like, this paper deals only with the direct surgical treatment of a divided nerve, and the best procedure to give the quickest and surest result. Since the first case operated nearly seventeen years ago, the largest number, of course, have been met with during the war, and comprise those overseas and on service in Canada. It is for this reason that one can only speak of actual results in a few of the earlier cases, since those of a later date will only be properly placed at some future time. Opportunities for study at the present, on account of the war, are greater than ever before, a very large number being now available. After the all-important necessity for relaxation of muscles; attending to movements and massage of joints; the use of splints and electricity, so that when the nerve is restored it will be in the best receptive condition for the return to normal function, questions arise that are many and important.

Did the injury cause immediate paralysis partial or complete, and, if not, how long after? Was it noticed only after the splint was removed or callus had formed? Was the wound septic and so on? The most complete history therefore is essential in arriving at a diagnosis of the condition of the nerve. If the paralysis is immediate and complete, the nerve is more often completely divided (though not by any means invariably so). If the latter, the chances are in favor of involvement in scar tissue, or callus, or resulting

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from sepsis. One is impressed with the fact that nearly all of these wounds reaching a base hospital are septic, arriving as they do some days after injury at the firing line. A clean wound is indeed a great rarity. Since nerve sutures in bullet wounds, at least, are necessarily nearly always secondary, sepsis plays a most malignant rôle. From choice, one would not think of cutting down in this condition but would rather wait some months after the wound had completely healed. There is no arbitrary rule on this point and must be left to the judgement of the surgeon, still four months for ordinary infection and six or more for the gas bacillus seems to be fairly general.

The treatment adopted by the staff of the Ontario Military Hospital during my service there was to leave these cases alone, to make no dissections or attempts to find the nerve, but to treat the septic condition under general surgical principles. For instance, there was a ward completely taken up by Carrel Dakins' method of treatment for all kinds of wounds, but at the same time other solutions as boric acid, plain boiled water, iodine solution and the like were tried in order to arrive at some comparative value of these various preparations. If complicated by paralysis, it was only after the wound had completely healed for some time that we dared an investigation. There were median and ulnar nerves bound down in scar tissue, likewise the cords of brachial plexus in two cases from shrapnel bullets; some sciatics and an anterior crural, a few in callus and the like, and occasionally a nerve without any apparent injury whatever.

In uniting a musculo-spiral this spring, involved in callus from severe gunshot wound, of the right arm, a reinfection took place after the wound had been completely closed for ten months, so one never really knows when this condition will occur, and yet my first case was undertaken seventeen years ago under similar conditions but with excellent results, as will be shown in a few moments. Although the wound should be healed first and repair made afterward, yet, if one can see the ends of a large nerve in a septic wound, the proper course to adopt would be to unite them at the time if the process does not involve actual dissection. The nerve will be improved by being brought in continuity, with a minimum amount of scar tissue between the ends, and will be easy to find later if necessary, and not be so widely separated and blocked by scar tissue. On this point one sees an exception to the general rule. When a case presents itself to the surgeon he must ask the question: "Is the nerve divided or bruised?" since in so many cases injured

nerves give the same symptoms as one completely divided. Can anyone distinguish between them? The general opinion is in the negative. Neurologists give differences in sensory, motor and electrical signs, but no one is absolutely certain. Some of my cases which were later found by operation to be bruised but not divided, gave the one almost constant symptom of pain and in some this was excruciating. A man was struck on the ulnar nerve at the elbow by the corner of a falling door causing complete paralysis, followed by severe pain which lasted three weeks and necessitated the use of morphine. The course suggested was incision into the sheath for relief of tension, but this was not done. The paralysis lasted six months and two weeks, and took apparently the regular course of a divided nerve. One author says "diagnosis can only be made when the nerve ends are actually seen". This being the case, what is the proper procedure? If you operate, the nerve may be intact, therefore nothing to be done. If, on the other hand, you wait the regulation eight to twelve months, you lose a valuable amount of time, and after suture another year or more for success, during which period the muscles and joints are without their trophic stimuli and must be kept constantly in condition for the moment when the nerve is restored. It is advisable not to wait, but, if other conditions are favourable, discover the exact condition by operation and not waste time.

Operation in some of these cases found the nerve slightly irregular and apparently thicker in places, but undivided. A discussion of this type is beyond the scope of this paper. Suppose the condition being favourable, the operation is performed and the nerve found to be divided, you all know the condition met with. The ends are more or less widely separated, buried in scar tissue, frayed out or bulbous. Larger on the proximal and smaller on the distal end. But this latter does not always occur. In a sciatic suture (early part of March—McC.) the distal end was distinctly larger than the proximal (a very rare condition), the only case that has come under my observation.

What is the procedure? The answer is quite easy if one can approximate the ends without tension. But suppose you are met with the problem of five or six cm. shortening and the nerve cannot possibly be brought together. That is a different story. One of these cases was the ulnar nerve in the forearm with a loss of 5 cm. and the ends were united with strands of catgut and surrounded by a complete sheath of fascia. One year after there was some slight improvement (Scott, March 7th, 1912) but never a satisfactory

recovery, in fact, practically a failure. Another involved the median and ulnar, where the latter was destroyed for over six cm. by the teeth of a binder. The upper and lower ends were buried in the sheath of the median nerve (lateral anastomosis—early November, 1906). This case was much more successful than the last, but not by any means complete, though some considerable function was restored. So that from all one gathers from cases both actual and experimental, the various methods in use at the present time in bridging a wide space are far from encouraging, as compared with the direct end to end anastomosis. Indeed one explores the literature to find a few successful cases.

When the latter cannot be accomplished, a piece of the same nerve split and turned down to fill the gap is far preferable to any foreign substance, even a piece of nerve taken from other part of the body, but with this the results are far from satisfactory.

Although in end to end anastomosis, the restoration of the nerve's continuity is no guarantee of its ultimate recovery, this, after all is undoubtedly by far the most rational and successful method. This being the case, how much greater must be the difficulties of recovery when substitution has to be made by bridging with various foreign substances. Time does not permit any discussion of these methods, so well known by every surgeon present, except perhaps mention may be made of a piece of artery or vein filled with agar-agar or some other medium through which the axis cylinder may grow. But any tube which collapses and allows scar tissue to come between the ends will likely be doomed to failure, because it seems almost certain that blocking of the path by non-penetrable scar tissue is the greatest cause of failure after suturing divided nerve ends. By far the best method then, the surest and safest, is to bring the ends together accurately, stripped of all scar tissue and bulbous overgrowth, until the nerve-bundles are easily seen and the ends bleeding slightly, with a suture directly through the nerve one cm. back, accurate coaptation, and held in that position. Muscle was used in some of these cases but a pad of fat or fascia equally insulate the suture line. Is it not remarkable that in division of the fifth nerve every scheme a surgeon can think of is tried to prevent union and yet, in ten or twelve months, the neuralgia returns as formidable as before, yet, in the nerves under discussion, a return of function is one of the most difficult problems in surgery!

Now, after a consideration of all these different methods and passing judgement on the results, what can be done where a large



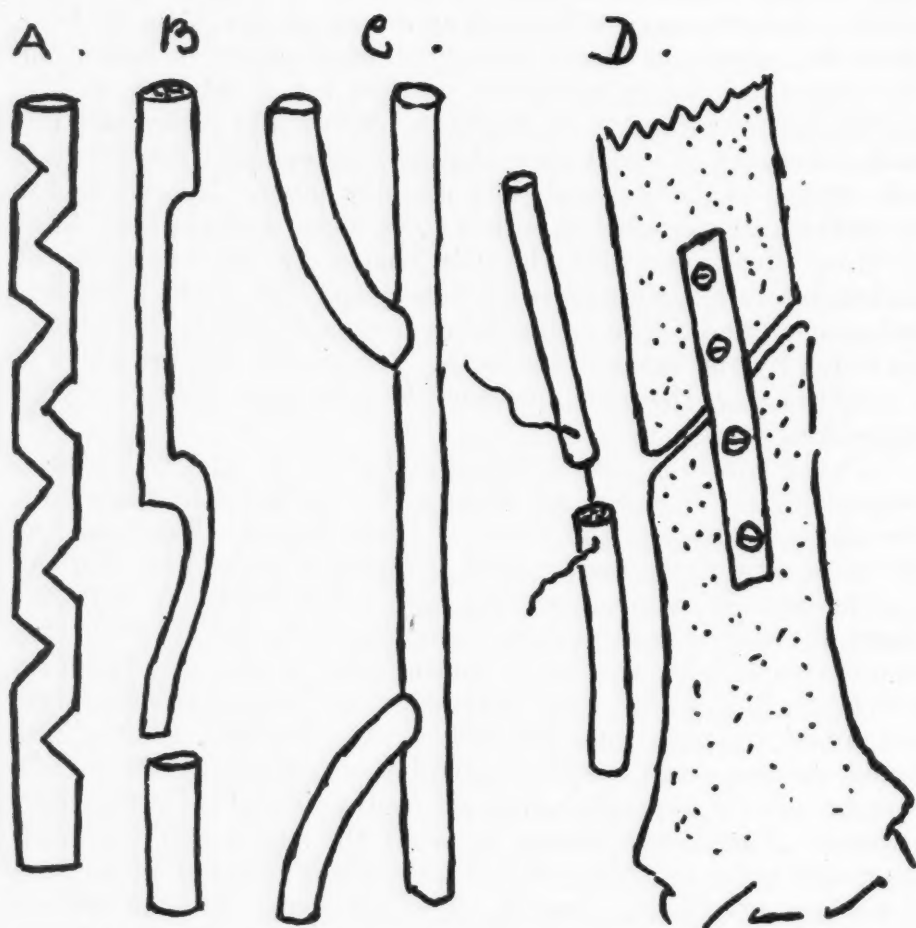
nerve such as a musculo spiral is entirely destroyed for six cm. or more and cannot possibly be brought together. The answer to that is the removal of a part of the bone to obtain the desired effect. Join the nerve in the most approved manner, plate the bone, place fat, muscle or fascia to prevent involvement in callus, put the arm up in the most relaxed position for all affected muscles (taking care to attend to all details on tendons and joints), and rest with the almost sure conviction that, in a reasonable time, sensation will return and the arm again be a useful member. It seems foolish to fiddle and experiment in such a crisis, since we know that direct suturing offers practically the only chance for success; when the patient's future usefulness is at stake (especially if the right arm be involved) and if he is compelled as the majority of us are, to earn his living by the sweat of his brow. In order to illustrate this in a practical way, this man consented to come here to-day for your inspection.

In the winter of 1901 (some seventeen years ago) this patient received a wound in his arm from a No. 12 shot gun while on a shooting expedition in the woods of Pennsylvania. The bone was fractured and the musculo-spiral completely paralyzed. Fifteen months later he came under my care. The sinus was still discharging pus, and paralysis was complete. The patient requested amputation. Being a young labouring man in the early twenties, with a long life ahead of him, this suggestion was ignored and operation attempted to suture the nerve. March 22nd, 1902, I dissected out the musculo-spiral nerve below and above. The ends were brought in apposition after six centimetres of bone had been removed. Fascia was placed between the nerve and the bone to prevent callus involvement and a drain was inserted on account of a septic sinus being present. The nerve was cut back with a sharp knife until the bundles were distinctly seen and blood oozed from the ends. These two factors undoubtedly form the ideal conditions for successful union. Silk sutures were used in this case. For four weeks discharge of pus kept up but greatly lessened. Eight weeks later there was no union of the bone and it was decided to use a plate.

July 30th, 1902, a silver plate was made by a local jeweller and with four screws was placed in position and the arm and shoulder encased in plaster of paris.

September 10th, 1902. The plaster was removed and firm union found to be established.

December 12th, 1902. An operation was then performed to



VARIOUS METHODS OF FILLING THE GAP WITHOUT THE  
AID OF A FOREIGN BODY

- A. Cutting nerve on either side to elongate it.
- B. Slicing a section off to fill the gap.
- C. Lateral anastomosis of ends into another nerve.
- D. Removal of bone, with plating, to bring nerve ends together.

remove the plate, the patient having fallen from his bicycle a month before, and three screws having worked out of the wound. Sensation returned in six weeks and motion on September 16th, six months and two days. This was first noticed by extension of fingers, then the wrist, and the movements of the thumb last.

October 1st. All movements were complete.

It is asserted that "After secondary suture epicritic sensation never returns." It is present in this case.

If you will allow me to say so, it seems that this was one of the first if not the first plate used in this country for uniting bone (now seventeen years ago) and the only case, as far as can be found by me in the literature where bone has been deliberately sacrificed to unite a large nerve.

## ON THE ROLE OF PHYSIOTHERAPY IN THE TREATMENT OF THE RETURNED INVALIDED SOLDIER

BY LIEUTENANT-COLONEL ROBERT WILSON, C.A.M.C.

*Consultant*

**T**HE hour is late and whatever I say must necessarily be brief.

You have heard several aspects of this large and intensely interesting problem of the returned soldier treated from the point of view of the general surgeon, the orthopædic surgeon, and the psychopathist. All would be more or less futile were they not followed by suitable after-treatment; all, at any rate, immensely helped by a proper use of those methods to which for want of a better, the name of Physiotherapy has been applied. Those methods which some of us in Canada were wont to look upon a little askance, adding to the number of mistakes which perhaps want of interest, with its resulting want of knowledge, has been responsible for, leaving them largely in the hands of those insufficiently trained in the higher branches of our art.

My purpose in addressing you to-night is to draw attention to these methods, and to mention briefly their place in the scheme of the treatment of the returned invalided soldier. Let me at once point out that the pieces of apparatus you have seen being used upstairs are only a few of those designed for muscle function training, and that though important and perhaps more spectacular, this department is only one of the many means at our disposal, and obviously only of use after surgical or other intervention on nerve, tendon, or joint, has made the return of muscle function possible. I want to emphasize this, because to those not familiar with modern physiotherapy, one is apt to get an exaggerated idea of the importance of apparatus, and overlook the principles underlying their use.

Humanitarian principles, military exigencies, and sociological and political economics, have combined, as the result of this world

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From the symposium on the "Returned Soldier Problem", delivered at the Hamilton Medical Week, Hamilton, Ont., May 29th, 1918.



war, as they otherwise never would, to make the question of the repair and rehabilitation of its human waste one of paramount and immediate importance; lessening the number of cripples; increasing the amount of effective fighting material; increasing the number of those available for industrial production; and so lessening the economic burden of the general population of the future by lessening the pensionable disability. May I quote two examples before I outline the plan we have found by experience to yield the best results? The Granville Canadian Special Hospital at Ramsgate was the first of its kind in England. It was opened in November, 1915, and it was my privilege to organize the treatment departments there. In the fourteen months from November, 1915, to December, 1916, 4,399 patients were admitted, of whom 1,795 were discharged to full duty, six hundred and sixty-three to light duty (with seven hundred and seventy-two invalided to Canada, and four hundred transferred to other hospitals). Thus 2,458 men were taken off the pension list and returned to active military work, and these were all of the class known as "crocks", who in the ordinary course of events would have been invalided to Canada for discharge from the army, and pensioning. At Epsom, another of our large treatment centres, the percentage of men returned to their reserve battalions was 20 per cent. greater than from ordinary convalescent hospitals where physical methods were not emphasized. The point need not be laboured.

In the scheme devised for our hospital centres in Canada, treatment departments have been provided, to be under the care of a medical officer specially trained. "*Eau courante*" or whirlpool baths and hydrotherapy in its various forms, massage, electrotherapy in its various applications, radiant heat, muscle-function training, gymnasia, with the necessary appliances, and a definite routine of work, games specially chosen or designed for their therapeutic effect, workshops for occupational therapy, where the thing made, whether of æsthetic or practical value, has been definitely chosen for the therapeutic value of the work necessary to make it, and not necessarily having any correlation to the previous occupation or elective desire of the patient; and finally the graduation of the patient into the purely physical exercise class, or his discharge to civil life, with his pensionable disability reduced to a minimum.

Such is the plan now in process of being carried out. To provide the necessary personnel, the institution of a school has been found necessary, where these methods may be taught. Such a

school is now in active work at Hart House, Toronto; it is known as "The Military School of Orthopædic Surgery and Physiotherapy". Here both medical officers and army medical personnel, physical training instructors, and female civilians are being trained.

Were I asked to emphasize any points in this work, it would be to say that the surgeon or physician of the future will have to familiarize himself with these physiotherapeutic measures; secondly, that they are indispensable as an aid to the surgeon proper, and thirdly, that they are in most cases only an aid, albeit indispensable, and that the officer concerned in administering it must work in the closest harmony with the surgeon originally responsible for the repair which makes the physiotherapist's work possible.

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WITHIN a few months Alberta has been able to get the Municipal Hospital Act into workable shape, and to have four public nurses in the field. Edmonton and Calgary will have among their exhibition features a demonstration of public health work under the direction of these recently appointed government nurses; talks on general health lines will be given, together with a display of literature and posters.

## INDUSTRIAL REHABILITATION

BY H. E. T. HAULTAIN, C.E.

*Vice-President, The Engineering Institute of Canada, Vice-President,  
The Canadian Mining Institute, Member of the Institution  
of Mining and Metallurgy, etc.*

*Professor of Mining Engineering, University of Toronto*

Professor Haultain was unable to wait for his turn to speak, but if the occasion had permitted, he would probably have spoken somewhat as follows:

Mr. Chairman, Ladies and Gentlemen:—

THE hour is late, and you have had a long and strenuous day. It would be entirely out of place under these circumstances, to attempt to give you an adequate outline of the work of the vocational branch, but I cannot let this opportunity pass by without attempting something. I have been Vocational Officer for the Province of Ontario for about eight months, in charge of the work in Ontario of the Vocational Branch of the Invalided Soldiers' Commission of the Department of Soldiers Civil Re-establishment of Ottawa. The head of this branch for the Dominion is Mr. W. E. Segsworth, Administrator. This vocational branch is charged with the responsibilities in connexion with all the special training given to the returned men with a view to aiding them to return to the industries. It is an industrial proposition rather than an educational one. It is not because I am a professor that I hold this position, but rather because for twenty years I was intimately connected with industries as a mining engineer before I became a professor. The work of this branch commences with the man at the earliest possible moment after his return to the hospitals in Canada and continues with him until months after he is placed in the industry. We begin our work at the bedside with what is known as "bedside or ward occupations", such as basket-making, sketching, needlework or other diversional occupations. We continue in the hospital in what, amongst other names, are called curative workshops. We continue after the discharge from hospital in a variety of ways, giving those

men whose disabilities are such that they cannot return to their previous occupation, special training courses averaging about six months with pay and allowances. For these training courses we have enlisted many agencies—the technical schools, the universities, the industries themselves, and also not a few special classes of our own organization. The problem is a large one. Being without precedent, we have to feel our way, which means making mistakes and profiting thereby, as well as making direct progress. As some illustration of the size of this work in Ontario alone, I may say that my head office in Toronto has a staff of over sixty-five engaged in studying and organizing, and this staff is growing rapidly.

If I can hold your attention any longer there is one idea that I would like to bring forward. You will note that the vocational branch provides, and maintains jurisdiction over, the personnel and the equipment for the ward occupations and curative workshops, that is, for the occupational therapy within the hospitals. On the face of it, it seems without possibility of supporting argument, that non-medical men should attempt to play any such part within a hospital, and I am quite prepared to argue against it and if winning were to be by a show of hands, without doubt win practically unanimously in this assembly, but I would be arguing against my own convictions. After eight months of close intimacy with this branch I am convinced that this proposition of our maintaining this work in the hospitals is sane in theory and sound in practice. The time is not opportune for discussing this important phase of the subject, but the germ of the idea is something like this. You have just heard Colonel Russell draw a distinction between the malingerer and the psychopath. If you will allow me to mix your language with mine, let me suggest that all these returned men are industrial psychopaths. Even when made mentally and physically fit they are industrially unfit. These soldier patients in your hospitals need not only surgical and medical treatment but also some other treatment—perhaps Colonel Cameron with his happy command of the classics will be good enough to coin a word or phrase. Meanwhile the engineers, the professional men of the industries, are tackling the work under a variety of names. As far as it has gone, it has worked comfortably and we have received most gratifying support from the medical men. My attitude towards my staff in this work is something like this: "The work of the hospitals is curative; the doctor is absolutely dominant; you have no enforceable rights and no privileges other than that of being present. You are guests in another man's house. So long as you behave your-



selves as becomes a guest you will receive all the gracious courtesies of a pleasant host. Your function is to coöperate so smoothly that it is a blending rather than a coöperation." And, Sir, that is the way it has worked out and is working out. My staff is made up largely of engineers—professional men. They are not all engineers, but nearly all the principal men are engineers or architects. They are the professional men of the industries, and as professional men they can coöperate with their brother professional men—the doctors—in service to the community.

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A new psychopathic Institute is to be erected in Winnipeg. The General Hospital finance committee held a meeting to award the tender for its construction. It will be used for the care and cure of soldiers of the province who return from the war suffering from mental diseases. Two years ago the provincial government voted \$50,000 for the purpose of establishing this institution, but the superintendent of the hospital and the architect affirm a sum exceeding this amount will be required. It is understood the provincial government will meet the added cost by means of a special vote next session.

## THE PRESENT POSITION OF VACCINE THERAPY

BY WILLIAM BOYD, M.D., M.R.C.P.

*Professor of Pathology, University of Manitoba*

IN the history of scientific thought, and especially in the history of medical thought, no phenomenon is so common as that of the pendulum. There is the forward swing, usually excessive, and there is the backward swing, even more excessive. In every case truth will be found to lie between the two extremes, but nothing is more difficult than to realize this while either swing is in progress.

Innumerable instances of this truth suggest themselves. At any given time there is always one favourite operation with the surgeon. As the White Queen in *Alice in Wonderland*, when in doubt as how to act, used to exclaim, "Off with his head," so the surgeon of to-day says "off with his appendix" or "out with his tonsils", and soon it may be "out with his spleen". So also the physician of to-day when in similar doubt cries "In with a vaccine!" It may not be amiss, therefore, to consider the present position of vaccine therapy, to dwell upon its very great uses, and to guard against the abuse which invariably tends to become associated with a potent remedy.

For the pendulum of vaccine treatment is about the height of its swing, and indications are not lacking that it may soon commence its backward journey.

The principle of vaccine therapy is the determination to the affected part of antibacterial bodies—lysins, opsonins, agglutinins, and so forth—these antibodies being produced by the injection into healthy tissue of the germs which are the *casual* agent of the disease. It is obvious, therefore, that the very first step is to determine accurately the nature of the causal organism.

Although this identification of the causal organism is essentially a laboratory procedure, the active coöperation of the physi-

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cian is absolutely necessary. Unless the specimen is collected with due precautions, it is not worth while considering the treatment of the case with vaccines.

Let us take the case of a patient suffering from repeated attacks of bronchitis. Such a patient may derive enormous benefit from the proper use of a vaccine. But if the sputum be collected in a casual manner, the real cause of the condition may be entirely missed. The patient may have a constantly recurring infection in his bronchial tubes with the pneumococcus, or the influenza bacillus. In passing through a mouth teeming with organisms the sputum may become heavily infected with an organism which may completely outgrow the delicate influenza bacillus. By adopting suitable measures, however, the careful physician can to a great extent eliminate this source of error.

Again, in collecting specimens from the interior of the nose, unless the swab be taken through a sterile nasal speculum, culture may show nothing but a growth of staphylococci collected from the hairs guarding the anterior nares. The same applies, but with even greater force, to specimens taken from the interior of the uterus in cases of puerperal septicæmia.

This point may appear too obvious to be dwelt upon, but in actual practice one finds that it is largely disregarded. In hospital work such specimens should be taken by the house surgeon, and not left in the hands of a nurse. I have actually had a swab of vaginal discharge sent in from a case of puerperal septicæmia with a request that a vaccine be prepared. Such carelessness can only serve to bring the whole method of vaccine therapy into disrepute.

But even when the specimen has been collected with the most careful technic, it may be no easy matter to separate out the causal organism. Hæmophilic organisms such as the influenza bacillus may require to be planted out on special blood-containing media, as they may not grow on the ordinary laboratory media. It is always desirable, therefore, to give the bacteriologist some indication as to the nature of the case, so that he may have some chance of starting his work on right lines.

Again it may be very difficult to separate out the organism even when we know that it is present. Films made from the urine of a case of cystitis may show a mixture of *B. coli* and a streptococcus, but in culture the coli organisms may grow so luxuriantly that the streptococcus simply cannot be isolated. And yet to treat the patient with a coli vaccine and ignore the streptococcus would be, to say the least, unsatisfactory. In such cases we may

succeed by some such device as adding an anti-coli serum to the culture medium, thus inhibiting the growth of the *B. coli*, and giving the streptococcus the chance to develop. A combined vaccine can then be prepared, and treatment instituted with a fair chance of success.

Having determined the causal organism, we must decide whether to use a stock or an autogenous vaccine. The question of the choice of the vaccine should lie with the bacteriologist. Everything depends upon the nature of the bacteria which he finds. Most cases of infection with the staphylococcus, and especially localized skin infections, do as well with a stock as with an autogenous vaccine. Indeed it is not uncommon to find that a case which has made little progress with an autogenous staphylococcal vaccine rapidly clears up when a stock one is used which has been prepared from a number of sources. Such being the case, it is only throwing undue work on the pathologist and expense on the patient to ask for an autogenous vaccine in every case of infection with the staphylococcus.

Other conditions in which a stock vaccine is preferable to an autogenous are infections by the acne bacillus and the gonococcus. Both of these organisms can only be grown with very considerable difficulty.

Autogenous vaccines, on the other hand, should be used in infections from streptococci, pneumococci, and *B. coli*. An exception may be made in the case of erysipelas, in which a stock polyvalent streptococcal vaccine sometimes gives good results.

The vaccine being prepared, its administration must next be considered. A vaccine is best injected into the subcutaneous tissue. Observations on the opsonic index indicate that a greater rise of the index occurs when this method is used than by the intramuscular or intravenous method. It is true that intravenous injections are coming into fashion, notably in the treatment of typhoid fever and of pneumonia, but the mechanism here is probably very different to that in the case of ordinary vaccine treatment, and will be considered later.

The method of treatment offers another instance of how the physician and the bacteriologist must work in conjunction. Merely to inject a vaccine once a week or so is in many cases to fall far short of one's duty to the patient, and certainly is not giving the method a fair trial. After all, vaccine therapy is not a sort of magician's wand by means of which we can exorcise every variety of



disease. It is merely one of the means at the disposal of the physician, and to exalt it unduly at the expense of the other well-tried methods is pernicious in the extreme. The man who tries to treat a case of pyorrhœa alveolaris with vaccines *alone* shows that he has no grasp of the principles of treatment. Again a chronic abscess cavity or sinus is often lined by a layer of coagulated lymph, which will effectually bar the way to any antibodies which may be present in the blood. Until the conditions have been altered by scraping the walls of the cavity, by the local application of 0.5 per cent. sodium citrate solution to prevent further coagulation and hypertonic saline solution to promote an outward flow of serum, and by the use of warmth, hot fomentations, etc., to produce hyperæmia of the part, it is futile to think of vaccine therapy. No doubt the reason why simple lumbar puncture is the most effective of all means of treating acute meningitis is that the withdrawal of the fluid by lowering the pressure enables the immune bodies in the serum to reach the field of battle.

Having now considered the general principles of the method, we may briefly consider its application in the case of some of the common diseases.

It is unnecessary to say anything in connexion with the use of vaccines in staphylococcal infections, except to recall the value of the stock vaccine. To see a long standing case of boils clear up under the use of vaccine is one of the delights of medicine, and when the patient has recovered he has the satisfaction of knowing that he is immune from his trouble for at least some time to come.

It is preëminently in localized staphylococcal conditions that the stock vaccine is so useful. If the infection becomes generalized, as in many surgical conditions, better results will be obtained with an autogenous vaccine. In such general infections the initial dose should be considerably smaller.

Another condition in which stock vaccines are commonly employed is gonorrhœal arthritis, and certainly in many cases the course of this intractable disease is shortened by vaccine treatment. In order to be certain that the gonococcus is the offending organism, the joint may be punctured and the fluid examined. Or a diagnostic injection of five hundred million gonococci may be given, and the patient's temperature taken every four hours. A rise of temperature of 1.5° or 2° with malaise and joint pains is taken to indicate a positive reaction. All our ideas regarding the importance of specificity, however, have lately been receiving rude jars, and it is now the

fashion to treat gonorrhœal arthritis with intravenous injections of some foreign protein, a stock typhoid vaccine being often employed for this purpose.

One of the diseases in which vaccines may prove most useful is chronic bronchitis. It is a condition which calls forth all the skill of the bacteriologist, for the germs which may cause it are numerous, and some of them are by no means easy to grow in numbers sufficient to provide material for a vaccine. In the first place it is essential that every care be used in the collection of the specimen of sputum. The teeth should be well cleaned with a hard new brush and water which has been boiled. No antiseptics must be used. The mouth and throat are to be thoroughly rinsed out with sterile water. Finally a small quantity of sputum is coughed up into a wide-necked sterile bottle. The specimen, especially in warm weather, should be examined as soon as possible, otherwise a very erroneous impression of the bacterial flora may be received. It is always wise to make smears on slides from the sputum while it is yet fresh. Finally, the bacteriologist on receiving the sputum must always plant it out on a medium containing hæmoglobin.

If all these precautions be taken, accurate information regarding the infecting organism will be obtained. The most frequent offenders are the streptococcus, the pneumococcus, Friedländer's bacillus, and the influenza bacillus. The predominant organism varies in a community from year to year—sometimes the pneumococcus, sometimes the influenza bacillus, sometimes a mixture of the two.

A vaccine is prepared from one or more of the germs present, when the time comes for it to be administered. Wright, in his early work on vaccines, used to lay great stress on the negative phase which observations on the opsonic index showed to follow an injection of vaccine. We now know that for practical purposes the negative phase may be disregarded in the majority of infections. Bronchitis, however, offers an exception. The negative phase is a real danger, for during it the patient is in a hypersensitive condition, and if he goes out into a cold wind or a heated public hall, his last state may be worse than his first. It is wise, therefore, to inject the vaccine early in the evening, and forbid the patient to go out till next morning, by which time the negative phase will have passed.

It is a universal rule in vaccine work that unless a vaccine produces a reaction, either the vaccine is useless or the dosage is inadequate. The reaction, in addition to the local one at the site

of injection, may be general or focal. The general reaction manifests itself by such symptoms as headache, malaise, and sleepiness, the focal by an increase in the physical signs at the site of infection. With the exception of hay fever, there is perhaps no condition in which we can so accurately watch the focal reaction as bronchitis. Before the injection is given, the amount of the twenty-four hours' sputum is measured, the temperature taken, and a careful chart made of the physical signs over the lungs. The day after the inoculation the temperature is again taken and the physical signs charted. By comparing the two charts it can at once be seen if there has been any exacerbation of the condition. This is a most scientific and accurate method of controlling the use of vaccines. By means of it we can determine whether we are employing the right organism, and whether the dose is suitable. Such observations prove that, whatever be the fashionable view at the present moment, specificity is of real importance in vaccine work. Suppose that a patient has a pneumococcal infection of the bronchi. The sputum, while being coughed up, may pick up the micrococcus *catarrhalis* from the nasopharynx. If a vaccine be made from the latter organism, no reaction will be produced in the lungs by even large doses. But if even twenty-five million pneumococci be injected, there will be a rise of temperature, marked increase in the amount of sputum, and great extension of the area of râles. Surely this response is specific in the strictest sense.

When the correct vaccine has been prepared and administered in the correct dosage, the results obtained in chronic bronchitis are generally gratifying, and sometimes brilliant. The sputum may diminish to a tenth of the amount, the cough largely disappear, and the general physique of the patient improve out of all recognition. I remember a striking case which I had under observation during the winter of 1913. The patient was a splendidly made man of forty-five, who had been through the Boer war without a day's illness. On returning to England, however, he developed very severe bronchitis, and since that time, that is to say for eleven years, his life was made a misery to him every winter by recurring attacks of bronchitis of great severity. He was almost always confined to the house for several weeks, and often had to stay in bed. He had lost between thirty and forty pounds in weight, and was very depressed, for he had consulted innumerable doctors, and had tried every conceivable method of treatment. All had been of no avail, and he saw no prospect of ever getting rid of his distressing malady..

I collected his sputum with the precautions already described, and took swabs from the nasal mucosa and the nasopharynx, planting them out on plates of blood-agar. From all of these sources I got a plentiful growth of the pneumococcus. An autogenous vaccine was prepared, and an initial dose of ten millions was injected. A most violent reaction followed, both general and focal. There was a rise of temperature of a couple of degrees, great malaise, and focal disturbance along the whole respiratory tract. There was a great increase in the moist sounds all over the chest, the sputum became copious, and watery, as did the nasal secretion, and there were signs of marked congestion of the frontal sinuses. When this reaction had passed off I diminished the dose considerably, and it now only produced a slight focal reaction in the lungs and the nasal mucous membrane. Although it is desirable to produce some focal reaction, it should be made the rule never to increase the dose until reaction is no longer produced. After a few months of treatment the patient became a new man. He put on flesh, quite recovered his buoyancy of spirits, the sputum greatly decreased in amount, and the local signs almost entirely disappeared. The final result was that for the first time for eleven years the patient was not confined to the house for a day during the whole winter, and at the end he was indeed a new man both physically and mentally. I have described this case in detail to show what can be done in a disease notoriously difficult to treat by the careful and scientific use of vaccines.

Advocates may be found for the use of vaccines in acute inflammatory conditions of the lungs, and especially of acute lobar pneumonia. I must confess to feeling very sceptical regarding the claims that are sometimes made in this connexion. Owing to the massive exudate in the alveoli, and the emptying of the pulmonary capillaries, it is impossible for antibodies, no matter how numerous, to reach the seat of infection. The use of vaccines in this condition is not only thoroughly unscientific, but is not justified by empirical results. The mortality of pneumonia has certainly not been lowered by vaccine treatment, although some of its advocates claim that the crisis is slightly hastened.

A very different infection of the respiratory tract, but one in which vaccine treatment is well worth a trial, is ozæna or atrophic rhinitis. There is still some doubt regarding the causal organism, but the *B. ozænæ foetidus* is so constantly present on the nasal mucosa that it is almost certain that it bears some relationship to the condition. I have lately been observing a patient suffering from



this condition, a boy of sixteen. Each time the nose was examined this bacillus was obtained in pure culture, and the cultures possessed an odour identical with that from the nose. After the sixth injection the boy had a somewhat violent reaction, and in a few days the odour had almost entirely disappeared. The father declared that it was 90 per cent. better. Sufficient time has not yet elapsed to allow one to say whether or not the improvement will be permanent, but the method is well worthy of trial in a condition in which all other lines of treatment are of so little avail.

Of the vaccine treatment of whooping cough I have no personal experience, but both the prophylactic and the therapeutic results appear to justify its use, although opinion on the subject is by no means unanimous.

There are multitudes of other conditions which have been treated by vaccines with greater or less justification, but it is impossible to touch upon them in even the briefest manner.

Before, however, leaving the subject of treatment and passing to that of prevention, we may consider for a moment the question of the vaccine treatment of the carriers of disease, and especially of typhoid carriers. To clear typhoid bacilli out of a carrier in whom they have firmly established themselves is a truly herculean task, a veritable cleansing of the Augean stables. Drugs and antiseptics may as well be poured down the sink. Under these circumstances vaccine treatment may be tried. In many instances it will fail, but cases have been described in which the bacilli completely disappeared from the urine, after having been constantly present for a number of years. An ingenious method may here be referred to which has lately been introduced for the purpose of readily isolating typhoid bacilli from a carrier. The great difficulty in isolating the bacilli, especially in the case of a faecal carrier, is the very large numbers of other organisms present in the lower bowel. The duodenum, on the other hand, is almost free from bacteria, but if the gall bladder harbours typhoid bacilli the duodenum may contain what is practically a pure culture of them. By lowering an Einhorn's duodenal tube into the duodenum, and thus gaining access to the contents of the gall bladder, many carriers may be detected who would otherwise be passed over. The Germans have found the typhoid carrier a thorny problem. They have even proposed forming a battalion of such carriers. This battalion might no doubt have been left behind in the great retreat with excellent results!

Let us now leave the question of treatment and turn to the

prophylactic use of vaccines. And here we are on much firmer ground. Whatever may be thought about the vaccine treatment of a disease which is in mid-course, it is universally admitted that no more potent and scientific method of prevention, short of removal of the cause, of infectious disease exists than the prophylactic use of vaccines. I have once or twice referred to the question of specificity. Whatever doubts may be cast by modern workers on the importance of specificity, none can be entertained on its being all important in prophylaxis. Inoculation with *B. typhosus* will not afford protection against *B. paratyphosus* A. or B. That is to say, the specificity of the protection is most sharply defined. This may be demonstrated in a striking manner by estimating the titre of the agglutinin present after a prophylactic injection. If a vaccine of paratyphoid B. be used, the patient's serum will agglutinate that bacillus in a dilution of perhaps one in five hundred, whereas the typhoid and paratyphoid A bacilli will either not be agglutinated at all or only in such low dilutions as one in ten or one in twenty.

All doubts regarding the value of prophylactic inoculation have been settled once for all by the gigantic experiment provided by war conditions. Wherever a few thousand men are gathered together under unhygienic conditions the menace of typhoid must be faced. In the Spanish-American war, out of 100,000 American troops, 20,000 developed typhoid. In the Boer war there were 57,000 cases of typhoid with 8,000 deaths—the same number that died from wounds. In the present war the death rate from typhoid amongst *inoculated* British troops on the Western front is lower than the death rate amongst civilians in England during the same period. Lest it be urged that improved sanitation and other similar measures are responsible for this truly wonderful result, we have a control in the small body of uninoculated men. I cannot give the exact figures for these, but the difference between the two both in case incidence and in mortality is most remarkable. The prophylactic work on plague and cholera is also well known.

It is, however, hardly realized how much may be done to prevent recurring attacks of some of the common diseases of civil life. Of course in this work it is essential that we be certain of the exact infection from which the patient is liable to suffer. An excellent case in point is hay fever. If grass pollen be the disturbing factor, the patient may be immunized against it during the winter months, with the result that when summer comes he can face his old foe with impunity. And in the case of hay fever we can determine with exactness the nature of the infection by employing the

skin reaction. Further, by determining the exact dilution with which the reaction is obtained, we have a sure indication as to the correct dose with which to commence treatment. One patient whom I treated in this way used to have attacks similar to hay fever if too large a dose were used, but when summer came he found to his delight that he could live in the country without life being a misery to him. In this country, however, where there is a variety of irritants, such as the ragwort, golden rod, etc., special care must be taken that the patient is immunized against the real cause.

Another sphere where prophylactic inoculation often proves of great value is in recurring infections of the respiratory tract. Some people get colds in the head every winter which they have great difficulty in shaking off. Others suffer from bronchial attacks which may confine them to the house for weeks, more especially in the case of elderly people whose mitral valve is not as competent as it should be. In such patients the infection is often due to the same organism year after year, the micrococcus catarrhalis, perhaps, in the nose, the pneumococcus in the chest. These patients are hypersensitive to some special organism, and if they can be rendered immune to it by three or four injections in the fall, the results may be most gratifying to the patient. Here again, of course, accurate bacteriological diagnosis is a *sine qua non*.

During the course of this paper reference has been made on several occasions to the question of specificity. When Sir Almroth Wright in 1902 introduced the use of vaccines for curative purposes, he based his work on the assumption that the injection of a dead culture of bacteria provoked a specific reaction with the production of a specific antibody. Within the last two or three years considerable doubt has been cast on the importance of the specific element by a number of observers. This doubt first originated with the work of the intravenous injection of typhoid vaccines in the treatment of typhoid fever. It was in 1912 that Ichikawa first used the intravenous route, and he was followed by a number of workers, notably Gay and Chickering in the United States. The essential feature of the method is to produce a marked reaction characterized by a chill, often severe in character, a rapid rise of temperature, and a marked leucocytosis. In successful cases these phenomena soon disappear, and the disease terminates by crisis. In a series of fifty-three cases of typhoid fever, Gay and Chickering succeeded in producing cure by crisis in 41.5 per cent., a truly remarkable result when the ordinary course of the disease is considered. Very shortly

it was found that it was quite unnecessary to use the specific typhoid vaccine in order to produce the reaction. Any vaccine would apparently do as well, and even albumose gave good results. And now it is being shouted from the house-tops that specificity is a myth, and specific therapy a snare and a delusion, that it does not matter much what you inject into a patient as long as it contains a protein, and that to insist on the importance of determining the causal organism is to declare oneself an out-of-date pedant. When we can treat typhoid with a meningococcus vaccine and pneumonia with a typhoid vaccine, why trouble about such small trifles as bacteriological diagnosis? There is only one thing to be said in reply. The history of medicine is one great cemetery of opinions which have been hastily adopted and as hastily abandoned. The medical profession has ever shown a remarkable lack of the critical faculty, which is so essential in all scientific work. Like the Athenians it has always been eager to hear some new thing. There are no doubt great possibilities in front of the intravenous method, but to my mind the facts so far discovered in no way invalidate the specific principle in vaccine therapy. The reaction produced by an intravenous injection is entirely different to that following a subcutaneous one. The former reaction in its severity and its rapidity of onset is much more allied to an anaphylactic phenomenon, which may leave the body in a state of antianaphylaxis in which it is immune to the action of the bacilli. At the same time one must admit that it is probable that the specific element is of considerably greater importance in prophylactic than in curative work. Further than that I am not prepared to go.

Vaccines, like other good things, may be abused as well as used. Wright introduced his method as a strictly scientific one, to be controlled by the use of the opsonic index. The method was adopted generally, the control was dropped, vaccines were used for any and every condition, and finally the manufacturer took the matter into his own hands, and proceeded to treat the profession to a positive diarrhoea vaccinatorum, and not only of vaccines, but of various semi-secret, concentrated preparations of toxins in the shape of phylacogens and its congeners, till all that the physician had to do was to make a clinical diagnosis and the vaccine arrived by return of post. All that is surely abuse of a valuable method. The successful and scientific use of vaccines necessitates close co-operation between the physician and the bacteriologist. The latter should be in possession of the clinical facts of the case. The specimen must be taken with due bacteriological precautions, and by one skilled in such work.



In every case a bacteriological diagnosis must be made before a stock vaccine is employed. To do otherwise is as reasonable as to saturate a patient with quinine without looking for the malaria parasite in the blood, or to start out on a course of treatment with salvarsan without first performing the Wassermann test. Finally, the dosage must be guided by close observations on the focal reaction, and a keen watch kept on the bacteriological progress of the disease. Only thus can we do justice to a method which is one of the most scientific and valuable in the whole range of therapeutics.

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A RECENT endowment to the University of Toronto by a prominent citizen provides a sum sufficient to establish four special chairs in the faculty of medicine, and may range anywhere between half a million to three million dollars. The chairs are to be held by specially qualified men who are to devote their whole time to the work. One chair in pediatrics, for the special study of children's diseases; a second chair in gynaecology, for advance work in reference to the surgical diseases of women; a third, probably for orthopaedic work, and a fourth in some special branch of medicine.

## SOME OBSERVATIONS IN RESPECT TO PUBLIC HEALTH

BY T. J. NORMAN

*Provincial Health Officer, Alberta*

IN presenting this short address under the above title, I do so with the desire of developing some points that may well be beneficially discussed, in the hope of bringing out expressions of ideas and opinions that would be helpful, not only to the provincial board and other health boards, but also to the medical practitioner and others more or less intimately connected with health work; for I recognize that the full-time health officer and the part-time health officer have the same difficulty to contend with as the Provincial Board of Health, only that naturally their work is more local, and not so diffuse as that attendant upon the provincial board.

If one addressed himself to a gathering wholly of the laity and asked what were Alberta's most valuable assets, many would probably answer at once, "Our wonderful and peerless agricultural lands fitted for the production of all kinds of grain, stock, and vegetable products." Others might say, "Our great storage vaults of coal," for  $14\frac{1}{2}$  per cent. of all the coal in the world is estimated to be in Alberta. Others again would refer to the timber and fisheries; while those of a poetic and æsthetic mind would lay stress on the wealth of beauty depicted in those wonder spots in the mountains—Banff, Laggan, etc., and the splendid natural floral beauty of the prairie. These truly are most wonderful assets, but, after all, are they our greatest? I think not; and careful thought will discover to us that our really greatest asset is not included in these above mentioned; but that the really greatest asset is our men, our women, our boys and our girls. For what would these wonderful first mentioned assets mean unless man investigated, exploited and made them productive; So we must place man as the province's greatest asset. Ruskin says, "There is no wealth but life. That country is the richest that nourishes the greatest number of noble and happy human beings."

But man, in a sense, is only a machine, and a machine to be

highly efficient must be perfect in every detail, and so a man to be at the highest stage of efficiency must be perfect, and that means perfect health; but to my mind, to be what one would term ideally so, we must have not only perfect physical health, but a perfect mental and moral balance as well; for physical and mental and moral health, it seems to me, are not only closely intertwined the one with the other, but are all more or less associated with the workings of all public health departments; for when we think of all the physical, mental and moral suffering so often connected with such diseases as syphilis, tuberculosis, etc., it behooves us to put forth every effort for the preservation at its highest efficiency that noblest and best of all our assets.

But are we doing this efficiently (for it is only as we attain one height that we behold great heights beyond), and if not, how far are we falling short, and why are we falling short? These are serious questions to be asked and answered; for it seems to me there is no doubt but that we are falling short. Evolution is the order of the day, and evolution means, or at least should mean, progress, and we should get a proper perspective and clear vision of the good which the future ought to bring; for the future generation to whom will fall the task of further advancements, summon each one of us to be true to the trust committed to him to-day, and mark all possible progress, and this in both an individual and collective sense.

It is said that every child has the right to be born well, and surely this ought to be so, when we consider that every child is brought into the world without any volition on its part and without any say in the matter. But with what a disastrous heritage some of them are endowed! and what with syphilis, tuberculosis, epilepsy, and feeble-mindedness in the family tree, the outlook for the babe, although it may be unconscious of it, is oft-times appalling, and the fair human monument may even at birth show the despoilment of the sins of the father or mother or both; and all through life, that human body is exposed on every hand, through disease, to disfigurement, impaired vitality, or death, much of which, if it were not for apathy, carelessness or ignorance, could be avoided, and so here again, much of this disaster and suffering is caused by actions in which the child has no part; such as ignorant or wilful exposure to infectious diseases, the use of impure food, water, milk, etc.

Then what of the home and the home's environment! It seems to me there is so much truth in what that great lover of nature, that loving, kindly soul—John Burroughs, the naturalist—has

said, that the following quotation from one of his books would not be amiss:

"Man loved the beautiful, the artistic, the ornamental, long before he loved the true and the just; he was proud before he was kind; he was chivalrous before he was decent; he was tattooed before he was washed; he built temples and cathedrals before he built a home; he sacrificed to his gods before he helped his neighbour; he was heroic before he was self-denying; he was devout before he was charitable."

Then the author goes on to say that we are to-day growing into the humanities, and we realize this is true, as we think of the various charities and charitable institutions. But are these charities always instituted and conducted out of love for our brother and mankind, or are they rather not used as a kind of salve for the conscience and merely as a recognized duty? But be that as it may, the principle is for good, and although Burroughs uses the past tense, we think it could be applied to-day, for really do we not pay much more attention to our parliament buildings, our churches, cathedrals and other various public buildings, than we do to the wretched back street home into which is ushered a life that will help either to make or mar the world into which it is born.

It seems to me we go about many things the wrong end first. We are constantly dipping out the muddy water instead of going back to the main or side streams that are contaminating the life, and shutting them off, or purifying them at the fountain head. The same thing applies in respect to infectious diseases. Take for instance, tuberculosis. We provide, it may be, sanatoria for some of these cases, whether advanced or incipient, but what are we doing to eliminate tuberculous milk by eliminating the tubercular cow; or what are we doing to protect the home where the tubercular patient may still be, or investigating as to whether others have been infected; or instructing in respect to prevention of further contagion, and seeing that those instructions are carried out.

It has recently been estimated that if all the tubercular patients in the United States, whether advanced or incipient, were placed in institutions, that the said institutions would not hold much over 10 per cent. of them, and if we had a provincial institution, doubtless the same percentage would hold good here. The same specialist made the statement that he considered careful home treatment productive of practically the same immediate and ultimate results as institutional treatment, and less costly to the patient and community.



Then, too, the venereal diseases; for while their ravages may not be as yet so prominent in this young province, still we must not fail to recognize that they are with us; and so along the whole line of the communicable diseases, the feeble-minded, the slum home; we do not get after the original trouble as we should.

Why is not more being done, is a most natural and pertinent question, and one somewhat difficult to answer; for there is no doubt but that more should be done, and when the public mind gets out of its somnolent apathy, more will be done as a result of the general public demand. But it may be said, why wait for the public, when it is so well known what ought to be done? And then at once looms up in the highway of progress, that old spectre, lack of funds; and in these strenuous times, it looms bigger than ever. The local board and medical health officer of the village, town, and city, cannot work toward ideal conditions without money, and so the water purification system and sewage disposal system is left in abeyance, and it is difficult for the provincial board to unduly press for the construction of such in these strenuous times, and the municipal medical health officer, no matter how progressive his ideas may be, may be held blameable for lack of initiative and progressive work, when in reality the blame should not be placed at his door. It may be well for the medical health officers of these urban municipalities to remember that the difficulties that thus present themselves in local administration, are the same difficulties that present themselves to the provincial board, for the dealing with health matters efficiently, whether provincial or municipal, can only be done through the medium of men and money, and in these times both are hard to obtain. However, the scope of a short paper does not enable one to go into matters in detail, but I hope more points will be brought out during discussion.

The administration of the health act by the provincial board of health has many discouragements and annoyances, many of which should not be, and some at least of these annoyances are also in evidence in respect to all municipal medical health officers, as they can well testify, such as concealment of communicable diseases by householders (and I am almost afraid that possibly sometimes the concealment may be with the connivance of the physician); lack of reporting by doctors through carelessness or other reasons; breaking of quarantine; and ignorance of the health act and regulations; and I would like in conclusion to mention a few specific instances covering some of these features.

Doctors are often writing in for health acts, and these not

always the newer physicians, but the old-timers, and yet I understand that health acts were sent out to all doctors; but the act has been lost or misplaced. We are only too glad to send on the acts, but time has been lost in dealing with the case in the meantime, for it is generally on the outbreak of disease that the request is made, and in many cases it is the local board that the matter of quarantine, investigation, etc., should have been taken up with, and so things are in a confusion for a time; whereas if health acts were hung up and located as a calendar would be, it could be referred to in a minute, or if lost, a new one asked for at once.

Some few weeks ago we sent out to all doctors and secretaries of local boards, a synopsis of the health regulations, and requested them to hang them up for easy reference, and yet even since that we have had inquiries both by phone and letter from doctors and secretaries of local boards wanting information in respect to matters which this synopsis fully covers, and this surely indicates a lack of interest in these matters.

Some time ago a doctor both wrote and wired about the control of an epidemic, and as all the inspectors were out, it was a couple of days before one could be sent, and I happened to be the one to go, and yet when I arrived I found it a case in which the doctor, had he been familiar with the health act and regulations, would have had no need to have done all this wiring, as the case was fully covered with the health act, and I turned it up and showed it to him, and the blame for not taking action rested in this instance entirely with him, as he had both the power and the responsibility.

Another old practitioner in the province recently wrote in asking when measles was taken out of full quarantine and placed in modified quarantine, and why, if such was the case, had he not been sent the amendments, and if it was still full quarantine, why was the city of Edmonton privileged to have modified quarantine. I replied that if he would turn to a certain page of the health act, he would find that the health act and regulations of 1910 placed it on the modified quarantine list, and yet here was a doctor who had evidently for years been placing measles under full quarantine, due to unfamiliarity with the act.

Perhaps the disease that causes us the most annoyance because of non-reporting, is typhoid fever, and we are constantly finding out cases by accident, and I will enumerate a few instances.

While in a town last fall, I asked the health officer if the town had had any typhoid. "Yes," he said, "two cases." Neither had been reported, and he said one had not been reported to him by the attending physician, and the other he was not sure of at first.

In another town, a case sent to a hospital in a city was traced up and it was then discovered that there had been several cases in the town, and none reported.

In another town, the fact of several cases was discovered in exactly the same way, by tracing back from a city medical health officer's report.

One of our men was in another town on other matters, and again discovered accidentally that the town had typhoid; and the same thing happens in respect to other diseases. This laxity ought not to be.

Then again, we find that some places do not make full reports to the provincial board. On looking over the reports sent to us, and the medical health officers' reports to their council, and comparing, we find that often there is a discrepancy. For instance, a couple of years ago, one place reported to us some seventy cases of typhoid in the year, but the city's books showed one hundred. Vital statistics are only relative at the best, but unless we get relatively correct reports, they are really not of much value. In our bulletin we have tried to show the desirability and necessity of prompt and full reporting, and we have reason to believe that there is an improvement, but we find the smaller urban places, rural municipalities, and physicians with cases in local improvement districts, are yet in many cases lax in sending in reports, and being in ignorance of these centres of infection we cannot investigate them, and we find out in ways as above, or someone writes in asking why we are not looking after the epidemic, and, as you see, there is good reason why.

How are we to remedy the laxity in respect to reporting? Those failing to report render themselves liable to the penalty of the public health act, but imposed penalties do not always work out the right way, and we would far rather trust to the honour of the profession and their desire to help, for in most cases I believe it is not wilful, but due to carelessness; but it is most annoying, nevertheless, to be trying to trace up, say a case of typhoid, and in doing so sometimes stumble into a nest of unreported cases in another town.

Water analysis is another of the functions of the provincial board of health, and although done free and this fact given prominence in bulletins and pamphlets, still it is not taken advantage of as it should be. Hoping this somewhat disconnected paper may provide at least some food for thought, I leave the matter with you for discussion.

## BLINDNESS OF THE NEWBORN—A PREVENTABLE DISEASE

BY GORDON G. COPELAND, B.A., M.B.

*Assistant Obstetrical Surgeon, Toronto Western Hospital*

**M**ORE than 30 per cent. of the blind of this continent are sightless as a result of venereal disease. Nearly eighty per cent. of these blighted and cursed unfortunates are the result of gonorrheal ophthalmia neonatorum, or inflammation of the eyes of new born babies due to clap or gonorrhoea. Primarily the parents of these children are responsible, the father usually actively and immorally so. The social evil, the sins of the fathers, are visited on the innocent and helpless infants.

This is a supposedly civilized country and our medical profession progressive. Is it really so? The hapless inmates of our asylums for the blind and the scores scattered among their own homes, a burden and problem to themselves and society, these blind are in their eternal night largely because the doctors, nurses, midwives, or others in attendance at the birth of these individuals failed to use effective precautions to prevent the disease developing, or treating it adequately when it started. I do not refer to those who have been called into a case in an emergency and have done the best they could, but to those doctors or nurses who habitually neglect to take proper precautions. Blindness caused by gonorrhoeal infection at birth can be prevented in 95 per cent. of cases for less than five cents in money and five minutes in time on the part of the attendant. When the provincial boards of health do their plain duty, prophylactic outfits will be furnished free of charge.

Through the courtesy of Mr. C. W. James, principal of the Ontario School for the Blind at Brantford, and Dr. B. C. Bell, ophthalmologist, both of whom I wish to thank, I have received the latest statistics representative of Ontario, and therefore probably true also for the other provinces of Canada. The four questions I asked and their answers are as follows:

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Read before the Canadian Medical Association in Montreal, June, 1917.



Question 1. What proportion of your students are blind from the effects of venereal disease? Answer. 33.5 per cent.

Question 2. What proportion are blind due to gonorrhœa? Answer. 22.6 per cent.

Question 3. What proportion are blind as a result of venereal disease present at, or contracted at birth? Answer. 23.3 per cent.

Question 4. What proportion are blind from the effects of ophthalmia neonatorum? Answer. 22.6 per cent.

All cases of ophthalmia neonatorum were considered gonorrhœal. A small number were blind at birth from interstitial keratitis and optic atrophy.

Ignorance, carelessness, irresponsibility, criminal negligence, have all too frequently stained the fair name of the healing profession. Through these vices, the nursing and medical professions have been the proximate cause why many children have needlessly gone blind when prompt and effective measures would have prevented nearly all cases from developing.

Do our doctors and nurses not know that gonococci, harboured in the genital tract of the mother, infect the eyes of the newborn babe and cause a disease which in most cases results in blindness if not treated effectively? They do! Do these practitioners not know that there are efficient, cheap and available antiseptics which, if promptly and correctly instilled into the eyes of babies from infected mothers, will surely prevent the growth of the infecting organisms? They do! If they do not know these generally known facts, they are not fit to practice their professions. But if they do know these truths and do not practice the recognized prophylactic methods against this terrible incapacitating disease, they are criminally negligent. But they say in protest, "the parents of the child were nice people and I never suspected any venereal trouble." Just so. Does that bring back the lost sight? The bloody fields of Europe were fair to look upon, yet they contained the deadly germs of tetanus. To-day the wounded are given several prophylactic injections of anti-tetanic serum because tetanus may develop otherwise. It is not feasible, and is often impossible to determine whether the gonococcus inhabits the birth canal of the majority of our patients unless there are active signs of the disease present. Often the baby is born before the arrival of the doctor, who may never have seen the patient before. Can nothing be done? Are we to take a chance that the baby will not become infected? Remember that the one case in a thousand means several thousand or

more in the seven or more millions of Canadian people. Out of that several thousand babies with sore eyes, several hundred are sure to go blind. As a people we are suffering and shall suffer great loss due to the unpreventable wastage of war. Let us stop needless and avoidable disabilities such as blindness of the newborn. There is only one way practicable: UNIVERSAL PROPHYLAXIS.

Compel every medical practitioner, nurse, midwife, or person in attendance at a confinement to use an effective antiseptic promptly and properly, instilling it into the eyes of the newborn babe. Yes! Even in the most apparently saintly family, for this desirable mental condition may be acquired after the clap of doom has made them think. You know as well as I do, that a very large proportion of the adult male population, especially of our cities, have had venereal disease. Probably I state the conditions conservatively when I say that over half the male population of military age have had gonorrhea. If your patients object that this procedure reflects on their character you can say truthfully that there are organisms other than the gonococcus which can cause babies' sore eyes and will lead to blindness. Let it hurt their feelings if unavoidable, but save the eyesight of the babies. In my own practice, I put several drops of freshly made 25 per cent. argyrol into the eyes of every baby. All my private cases get this treatment. Just put a two grain tabloid (B. W. & Co.) of argyrol in a sterile graduate and add eight drops of sterile water making a fresh 25 per cent. solution. I never ask the parents and rarely discuss it with them, considering this duty as much a part of good obstetrics as boiling up my gloves and instruments. To fail to give the baby adequate and well-known preventive measures against disease to the full extent of our knowledge and ability is malpraxis.

Ontario is at last making a move in the right direction. Dr. McCullough, chief officer of health for Ontario, writes me in part as follows in reply to my question as to the attitude of his department on this important matter: "If I had my way about it, I should have everyone concerned with a confinement report sore eyes occurring during the first two weeks, to use prophylactic treatment under penalty, the prophylactic outfit to be supplied free by the provincial board. The provincial board feels that we should have such legislation and will do what they can to obtain it." This progressive attitude deserves generous support. Bulletin 49, of the United States Public Health Service, prepared by Assistant Surgeon General Kerr and very kindly sent to me by him and specially marked is most instructive in following the progressive laws dealing

with this subject. I shall only give the gist of a few of the more important laws. On the birth certificates used in the states of Indiana, North Dakota, Minnesota, and Ohio there are clauses reading: "Were precautions taken against ophthalmia neonatorum?" In New York State the special clause reads: "What preventive for ophthalmia neonatorum did you use? If none, state reason therefor." Failure to answer these questions renders it unlawful to try to collect by process of law, bills or charges for professional services in connection with the case. When no physician is in attendance on the case, the health authorities must furnish remedial treatment. Several states furnish prophylactic outfits, consisting generally of 1 per cent. silver nitrate in an ampule, a sterile dropper and instructions. The laws on this question are notably good in Indiana, North Dakota, Porto Rico, Utah, and Illinois.

Utah: Acts of 1911, ch. 30.

Sec. 1.—"It shall be the duty of every physician and every midwife attending a case of childbirth, to report to the local board of health every case where the new-born child has inflammation of the eyes, attended by a discharge therefrom. Such report to be made within six hours after the appearance of such disease. It shall be the duty of such physician or midwife to treat the eyes of the child so afflicted in accordance with the rules of the state board of health. Every physician or midwife failing to comply with the provisions of this act shall be guilty of a misdemeanor."

(RULES: STATE BOARD OF HEALTH)

Rule No. 1. No midwife shall treat any case of ophthalmia neonatorum, or inflammation of the eyes of the newly-born infant, unless it is impossible to secure the services of a physician, provided that in case the services of a physician shall be secured, a midwife may begin and carry out treatment until his arrival.

Rule No. 2. In the event that the services of a physician cannot be secured, midwives are authorized to use and apply the following treatment: Immediately upon the discovery in a newly-born infant of an inflammation of the eyes, attended by a mattery discharge therefrom, five drops of a 20 per cent. solution of argyrol shall be dropped into the eyes with an eye dropper, after having separated the lids with the finger and thumb, and this treatment shall be repeated every hour for four days, and longer if a discharge is still present. After four days, if the discharge has ceased, the treatment may be reduced in frequency to intervals of four times daily for several days, until it is shewn that the discharge is not liable to return.

Before each application of the argyrol solution, the eyes should be thoroughly irrigated, and cleansed by dropping or pouring into them a 1 per cent. solution of sodium chloride (common salt) or a saturated solution of boric acid. For practical purposes, the salt solution may be prepared by dissolving one teaspoonful of salt in a pint of water.

NOTE—The person treating the eyes should exercise the utmost care to avoid touching the cornea (eyeball), as there is danger of causing serious injury thereby. In applying the treatment, the child should be placed flat on its back, and the head so held that the solution will not quickly escape from the eyes.

Inasmuch as the secretions from the eyes are very infectious, care should be taken to destroy all articles contaminated by them, and to sterilize the hands after each treatment.

The treatment above described is considered by eminent authorities to be entirely

effective and safer than solutions of silver nitrate, and it is recommended to all physicians in general practice.

Solutions of argyrol quickly deteriorate and should be freshly prepared for every case. Upon request, the State Board of Health will furnish materials for preparing fresh solutions.

It is recommended that physicians and midwives shall make one application of the argyrol solution at the birth of every child as a prophylactic or preventive treatment after having first thoroughly wiped the eyes with absorbent cotton, or soft clean linen, and bathed them with a saturated solution of boric acid.

Rule No. 3. On receipt of notification under this act, it shall be the duty of the local health officer to immediately investigate the case and satisfy himself that the rules of the State board of health are properly complied with. He shall also immediately report the case to the State Board of Health by telephone or telegraph."

The Revised Statutes of Illinois, 1915, chapter 38, page 975, "An Act for the Prevention of Blindness from Ophthalmia Neonatorum," etc. This law requires that all physicians and midwives shall advise the State prescribed prophylactic, 1 per cent. silver nitrate in the eyes of all newborn children at once after birth, and report all cases coming to their knowledge of babies' sore eyes within six hours from the time first noted. Under this act several doctors and a considerable number of midwives have been arrested, convicted, and fined for infractions thereof. A few similar convictions in Canada would have as salutary effect here as it did in Chicago. Under the above law, parents who are careless or unwilling to have their children promptly treated, were arrested, and the eyesight of the babies saved against the strong opposition of the ignorant parents. Some of this information I obtained from an interesting article in the *Modern Hospital*, January number, by Carolyn Conant Van Blarcom, R.N., Secretary of the Illinois Society for the Prevention of Blindness, and which society I wish to thank for kindly loaning me these striking posters.

We are in sad need in Canada of a publicity campaign in regard to the whole subject of venereal disease. The crime of silence must stop. The medical profession must quickly decide to be honest and open with the public on this vital question. Those doctors who desire the public to be kept in ignorance in the hope that their practices will benefit thereby, must be discredited and dishonored by all honest men.

We may look for, hope for, and best of all, work for the stamping out of venereal disease, but we shall not likely reach the goal in our generation. Deplorable as it is to have to say it, many thousands of our brave troops have become infected, especially with gonorrhœa. That is these cases have been recognized, in civil life the numbers are larger still. When the longed for peace occurs,



I feel certain that in spite of the grand work of the Army Medical Corps, there will be an epidemic of venereal disease sweep over Canada. We should make every effort right now to minimise its effects. The commission on venereal diseases is doing good work, but special and specific legislation is needed at once to stamp out blindness of the newborn which is a special problem in itself. Aside from our moral and humanitarian motives, motives which we as a noble profession claim as our birthright, the prevention of vast financial losses, sure to occur if this scourge is not checked, should appeal to the public.

The eyesight of our babies yet to be born can be saved, we can save it, and we must save it. To that end, I beseech you to take strong and effective action this very day by sending a powerfully worded resolution to the boards of health of each of the provinces and also the Dominion to at once enact proper legislation covering this matter. If the Canadian Medical Association individually and as a body determined to stamp out blindness of the newborn, they have the power and influence to wipe away this curse in one year. I therefore appeal to you on behalf of the eyesight of the babies to come, to remove this terrible plague.

N.B.—Since this paper was read, I am glad to say that Ontario has enacted legislation covering this subject. I feel very happy that I have had the opportunity of being one of the factors to stimulate such good laws, which shall have a profoundly beneficent effect on our people. Great credit is due to our Provincial Board of Health for this progressive legislation. Ontario practitioners should now whole-heartedly back this law and so encourage other provinces to enact similar.

The following Regulations were approved by the Lieutenant-Governor-in-Council, on May 21st, 1918, and published in the *Ontario Gazette*.

#### REGULATIONS FOR THE PREVENTION OF BABIES' SORE EYES

*Regulation 1*—Every physician in attendance upon a lying-in-woman shall, immediately following the birth, instil into the eyes of the newly-born child a sufficient quantity (a few drops) of a one per cent. solution of nitrate of silver (supplied free by the Provincial Board of Health) or of a 40 per cent. solution of argyrol.

*Regulation 2*—If within two weeks after the birth of a child, one or both eyes shall become reddened, inflamed, swollen or show

any discharge, every physician, midwife, nurse or person in charge of a maternity or other hospital where such child is, and every person in charge of a child, shall forthwith report in writing to the Medical Officer of Health, the name, age and address of such child together with the circumstances of the case.

*Regulation 3*—The Medical Officer of Health shall, upon receipt of the report referred to in Regulation 2, and if the child is not under the care of a legally qualified physician, direct the parents, or whoever has charge of the child, to immediately place it in charge of a legally qualified physician, or if the parents or persons in charge are unable to pay the cost of such attendance, the Medical Officer of Health shall provide the necessary treatment at the cost and charge of the municipality.

*Regulation 4*—The Medical Officer of Health shall send a weekly report of all such cases to the Secretary of the Local Board for transmission to the Provincial Board, as required by Section 24 of the Public Health Act.

NOTE—The Laboratories of the Board at Kingston, London, and Toronto provide free laboratory facilities in all communicable diseases and venereal diseases.

#### RULES FOR THE PREVENTION OF BABIES' SORE EYES

##### *What to do Before the Baby is Born*

1. The care of a child's eyes begins *before* it is born.
2. The mother's parts, through which the child passes at birth, should be washed several times a day with soap and water, for about one week before the baby is born.
3. If a discharge comes from these parts, the mother should at once consult a legally qualified physician, because this discharge, if not stopped, may probably destroy the baby's eyes.
4. This discharge may be caused by gonorrhœa or it may not. In any case it should be given attention, *or a blind baby may be the result.*
5. If for any reason a doctor is not consulted, the mother should not only keep her parts clean, with soap and water, but she should use a fountain syringe to syringe out her parts, several times a day, with warm, boiled, soap and water.
6. The mother should be careful to keep her hands clean and away from her eyes, or she may get some of the poison in her own eyes, and cause blindness.
7. All cloths, etc., used by her in cleaning her parts *should be burned*, as they may cause infection. It is better to use quantities of cheap cheese cloth and then burn it.
8. If the mother has a discharge coming from her parts, she should keep away from the other people in the family as much as possible, for she may cause the same disease, and possibly blindness in them.
9. If the mother has a discharge, she should try and use a separate water closet or vessel, and keep everything perfectly clean with soap and water cleansings.
10. Unless there are proper conveniences in the home, and the attention of a good doctor, *it would be better for babies to be born in hospitals*, where everything is convenient and clean, and where the mother may be sure of a good doctor and nurse, and where if mothers are too poor to pay out money, they can be cared for free.

11. If the mother does not go to a hospital she should always call in a qualified physician.

12. If the mother is poor, she should not forget to call a visiting nurse, if one can be obtained. *Nurses know their business, and can tell the mother what to do.*

*What to Do After the Baby is Born*

1. As soon as the head is born the mouth should be swabbed out with a piece of cheesecloth upon a finger, the face should be washed with clean water, and the lids should be carefully cleaned.

2. After the child is separated from the mother, the face should be again washed, *without soap*, giving especial attention to the lids.

3. The eyes should now be washed out with a solution of boracic acid. To prepare this, take a pint of clean water that has been boiled and allowed to cool. Then put two teaspoonfuls of boracic acid in the water and stir it up with a clean spoon. Then open the baby's eyes and flush them out with a few teaspoonfuls of this solution.

4. The lids should now be opened and two or three drops of a one per cent. solution of nitrate of silver, or of a 40 per cent. solution of argyrol, should be carefully dropped into the eyes. *Be sure the medicine gets into the eyes. This should be done always, even in cases where there is no reason to suspect disease. It almost surely prevents dangerous "Baby's Sore Eyes".*

5. The drops usually make the eyes a little red for a few hours, but this does no harm. *If it is not done, a blind baby may be the result.*

6. Mothers should be sure that this is done, *even* if the doctor does not think it necessary.

7. Mothers should not think that breast milk, or tea leaves, or poultices, or *anything else*, will serve the purpose. Cleanliness and the nitrate of silver or argyrol solution are the only things that will do.

8. If the baby's eyes get red a few days after birth, *the baby should be taken to a physician at once.* Or, better still, take the baby to a properly qualified eye specialist at once. *Do not wait*, thinking it is "just a little cold", and hoping the eyes will get better in a day or two.

9. Do not listen to what the neighbors say. *Consult a doctor at once. Delay may mean blindness to the baby.*

10. If a newly born baby has "sore eyes," the best place for it is *in a good hospital*, where it can be properly cared for. Such cases require careful treatment *every half hour day and night.* If the child is not taken to a hospital, however, *two* paid nurses, or *two* visiting nurses, should take care of the baby day and night.

*All this could have been prevented if the silver solution had been dropped into the eyes when the baby was born.*

11. All cloths, cotton, etc., used around the baby's eyes should be *instantly burned.* Every one touching or treating the baby should keep perfectly clean. *The hands should always be washed immediately after touching the baby.* People coming in contact with a baby having "sore eyes" should, if possible, be kept in a *separate room*, away from the rest of the family.

The proper nitrate of silver solution is supplied *free* by the Provincial Board of Health. The Board at its laboratories in Kingston, London, and Toronto, makes free diagnosis of gonorrhoea and syphilis.

## Case Reports

### A QUESTION OF DIAGNOSIS

BY HARRY H. McNALLY, M.D., C.M.

*Fredericton, N.B.*

**T**HERE is nothing in the science of medicine which cannot be proved. The following interesting case warrants, I think, place for publication.

Mrs. T— B—, age thirty-five years, consulted me, giving me the following history: "I have heart disease, with dropsy. My legs are badly swollen and I am swelled clear to the abdomen. I have been dropsical for two and one half years—in fact, longer, but more markedly since my last baby's birth, two and one half years ago. The swelling goes down somewhat at night but appears to full extent the next day. It is getting worse. I have consulted many physicians in various places, and all give me one diagnosis—dropsy from heart disease. I have given up doing anything for myself except trying to care for myself—avoiding over-exertion. I have no pain, nor have I ever suffered any pain of late years. There is no swelling in my body above the abdomen."

Examination showed the legs badly swollen and the abdomen abnormally large, but palpitation revealed nothing extraordinary. The rest of the body as the patient had described was clear of swelling.

Cardiac examination showed apex in its normal position; cardiac valves appeared to my ear perfectly normal—blood pressure 125; pulse pressure 60. I therefore concluded there was no cardiac weakness. The urine was examined. There was no trace of albumen nor sugar—specific gravity 1020—faint acid reaction; there was no history of urinary irritation.

Pelvic examination showed nothing but uterine displacement a little to the right side—organs otherwise appeared normal. There had never been any history of jaundice. The spleen was not enlarged. X-ray was not used.

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Received for publication June 6th, 1918



Examination of the blood showed hæmoglobin 90 and normal in every respect. Alimentary tract was in good working order.

All the causes of dropsy in the lower part of the body were apparently excluded, but one, namely—pressure on the abdominal vena cava. It must be the vena cava because the legs were equally swollen.

I opened the abdomen and found everything as it had appeared from the outside—normal. The incision was made to permit a clear view of the liver, gall-bladder and a careful examination of the pelvic organs as well. After fixation of the uterus, a careful examination was made of the posterior abdominal region. On the right side in the vicinity of the kidney a large cystic mass was felt and below this I felt a hard stony substance. The abdominal incision was repaired, and an incision was made over and parallel with the crest of the right ilium. Reaching the mass it was found to be a cystic kidney and about two and one half inches below in the ureter was deposited a stone about as large as a horse bean. This was removed through the ureter and the mass drained and brought to the surface, opened and found to be devoid of kidney tissue. The kidney or cyst was removed with the part of the ureter between the stone and the kidney. Patient made an uneventful recovery, swelling subsiding at once from the legs and abdomen.

In the cystic kidney were found two stones and much debris but no kidney tissue could be detected. Further history elicited from the patient says that fourteen years previous she had been ill with a pain in that side, being confined to bed for several weeks and treated with hot applications, but after that had been troubled but little with her side. It is quite apparent that the obstruction had taken place in the ureter at that time. Back pressure had caused atrophy of the kidney substance, and the other kidney had gradually taken up the full work.

## Editorial

### THE HOSPITAL SHIP *LLANDOVERY CASTLE*

THE sinking of the hospital ship, *Llandoverly Castle*, by a German submarine and the inhuman conduct of its commander, has aroused a world-wide indignation that will neither decrease in intensity nor drift into forgetfulness. Like the *Lusitania* it will, for the enemy, be remembered only too well.

The *Llandoverly Castle* was torpedoed seventy miles from the Irish coast on the night of June 27th. She was on her way to England. All lights were burning, a huge electric cross over the bridge, and strings of white and green lights on either side. The red crosses on the side of the vessel also were illuminated by electric lights. The outrage was deliberate and premeditated; there is no doubt it followed upon orders given the submarine commander by the superior German authority, which alleged the presence of eight flight officers. The allegation was without foundation and could have been easily tested by right of search.

The *Llandoverly Castle* had on board two hundred and fifty eight-persons, including eighty men of the Canadian Army Medical Corps and fourteen nursing sisters. Almost all the nurses were of the first division, having been out since the early days of the war in 1914. Since that period they have been doing duty at Casualty Clearing stations in France and England, and on Hospital Ships. The boat with the nurses on board capsized and all were lost. Very nobly the nurses died, without a murmur of fear, true to the high tradition of their profession! The only boat saved contained twenty-four men, including the commander Captain R. A. Sylvester, Major Lyons of the Canadian Army Medical Corps, three other officers and several C.A.M.C. orderlies.

It is noticeable that five boats were seen to get away fully loaded and there was no panic or confusion. The Admiralty report declares that the submarine after the sinking of the ship shelled an unknown target, which the latest testimony of the survivors show to have been the missing boats. The tale of crime reveals wanton deliberation on the part of the submarine commander. The submarine charged to and fro amid the wreckage to which were clinging survivors, and its commander fired revolver shots on those who were picking up drowning men and compelled them to desist. The Admiralty also reports on the cruel treatment of Major Lyons who was badly injured by rough handling.

The *Llandovery Castle*, steaming on her way under regulation lights, was plain to see and could not be mistaken for anything but what she was—a ship immune by every law of war and peace from attack or molestation. Out of one hundred and three hospital personnel ninety-seven were lost. For the doers of this evil deed there lies in wait certain doom; none will escape the sword of justice, which is not wielded by human hands. All who had a share in this awful debt to humanity will have to pay to the uttermost farthing.

Eighty-nine members of the Canadian Army Medical Corps have laid down their lives. Many of these have served with distinction; all have served with faithfulness. To the many homes bereaved throughout our wide Dominion, by this great sacrifice, we reach out a vast sympathy. We do more than this—we sound a word of cheer, since in this same tragedy of the sea is enfolded a high consolation. For your Dead have gone on to the great Beyond, and gone grandly. Merciful missionaries were they on the king's highway; always responding to the cry of pain in a tortured world; always alleviating that pain; fighting destruction with reconstruction, self-devoted, steadfast, unafraid. "Service and Sacrifice," you have the countersign—"Pass on, great-hearted Company, All's well."

The following is a list of the doctors and nurses from Canada who lost their lives on board the *Llandoverly Castle*:

Lieutenant-Colonel Thomas Howard MacDonald; Major Gustave Mitchell Davis, Welland, Ont.; Captain Arthur Vincent Leonard, Toronto, Ont.; Captain George Luther Sills, Tweed, Ont.; Captain William James Enright, Port Daniel, Bonaventure, Que.; Honorary Captain Chaplain Donald G. MacPhail, Kingston, Ont.; Nursing Sister Christina Campbell, Victoria, British Columbia; Nursing Sister Alexina Dussault, Montreal, Que.; Nursing Sister Carola Josephine Douglas, Swan River, Manitoba; Nursing Sister Minnie Follette, Ward's Brook, Nova Scotia; Nursing Sister Margaret Marjorie Fraser, Moose Jaw, Sask.; Nursing Sister M. J. Fortesque, Montreal, Que.; Nursing Sister Catharine Gallaher, Ottawa, Ont.; Nursing Sister Rena McLean, Souris, Prince Edward Island; Nursing Sister Mary Agnes McKenzie, Toronto, Ont.; Nursing Sister Jessie Mabel McDiarmid, Ashton, Ont.; Nursing Sister Gladys Irene Sar, Montreal, Que.; Nursing Sister Maebelle Sampson, Duntroon, Ont.; Nursing Sister Anna Irene Stammers, St. John, New Brunswick; Nursing Sister Jean Templeton, Ottawa, Ont.

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#### THE AIR FORCE AND THE MEDICAL SERVICE

**T**HE progress of the war is making new demands on the medical services in directions unthought of two years ago. The latest of these calls is for specially trained men for the Air Force. Not long ago the medical officer attached to an aerial squadron was thought to have a sinecure position. He had few wounded to attend to as most of his casualties appeared in the Killed and Missing classes. The sick parade was not extensive as the majority of the personnel underwent no hardships or exposure. The men could take frequent baths and had no marching to do, so he had no scabies or bad feet to look for and prevent. The officers gave him even less



trouble than the men, owing to their wonderful *esprit de corps*. He had no trouble with hygienic conditions as the aerodromes were miles from the front line, where there is no difficulty in disposing of refuse.

Until comparatively recently the medical officer justified his presence by performing these duties so far as they fell to his lot to the satisfaction of all concerned. The whole complexion of these duties has been gradually changed, until now the air-pilot or observer receives similar attention from his medical officer as the athlete at the training table does from his supervisor.

It was in the training camps in England that the startling discovery was made that practically all the accidents in training are due to the pilot and comparatively few to the machine. With the cause of the accident placed on the pilot, it follows that the catastrophe is either due to his carelessness, poor physical condition, or insufficient training. The last cause can generally be eliminated as the course of training has been so carefully studied by practical airmen, and it has proved to be sufficient, when the pilots are properly chosen and their physical condition attended to during training.

The crux of the situation, both in the training camps and at the front, lies in the careful choosing and care of the pilot. This of necessity must fall very largely on the medical service and for this work medical men of very special training are required. To choose the men properly one must combine the knowledge of the aurist, neurologist, and up-to-date general practitioner. The latter must be expert in cardiac, blood-count, and blood-pressure work. The accurate knowledge of human nature, which goes with a successful practice, will be one of his main attributes of success in this work. Too much stress cannot be laid on the all-round skill required of the medical men doing this selective work. It is obvious that many men could never become satisfactory pilots or observers, owing to their nervous temperament or their slowness of thought and action. While one would naturally insist on the

men for this service being in perfect physical condition, yet we know that one of the most successful fighters of the war was suffering from pulmonary tuberculosis, and used to have hæmorrhages between his air battles. He was finally killed in action after a long series of victories. This case is just cited to show how difficult the problem of choosing suitable men really is.

One great difficulty in the work of caring for the pilots is their reticence in revealing symptoms that would indicate any sign of excessive strain. It is only by a careful routine examination and an intimate contact with the men that troubles can be discovered soon enough to avoid a catastrophe. The first sign of staleness in a man necessitates that he stop work in the air at once—very often against his own will and possibly contrary to the wishes of his superior officer.

In this field of work there should be considerable scope for that large body of younger medical men in the army who have always felt that their hospital training and experience could be more utilized than it has been. Many of these have made a greater sacrifice than either the older or the still younger men, so it would be gratifying if their wishes could be met in this way.

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THE new Canadian Hospital at Joinville le Pont has now been completed. A gift from the Canadian people through the Canadian Red Cross, it has been planned and equipped with everything that medical science demands, and will be administered by Canadian doctors of tried experience. It will be in command of Colonel G. E. Beauchamp, of Montreal, a chevalier of the Legion d'Honneur, assisted by Lieutenant-Colonel J. P. Decarie, chief physician, and Lieutenant-Colonel Z. Rheame, chief surgical officer. The new hospital contains five hundred and twenty beds, but the capacity can be further extended under canvass if the demands of the wounded require it. It is situated in a healthy and picturesque spot, on the beautiful Plateau de Gravelle, within the environs of Paris.

A MOST gratifying letter has been received from Washington from Mr. Henry P. Davidson, Chairman of the War Council of the American Red Cross, with the splendid gift enclosed of five hundred thousand dollars, a contribution to be devoted to the relief of Canadian soldiers at the front, though it is to be understood that the gift is without restrictions. A copy of the resolution adopted by the War Council of the American National Red Cross was forwarded with the gift, part of which follows:

"WHEREAS the American people profoundly and gratefully recognize the devotion of the Canadian people and the armed forces of Canada in the great war and are deeply appreciative of the spirit of heroism and self-sacrifice with which so many Americans have fought and died as members of the Canadian forces during the past years, and it is highly appropriate that the American Red Cross should extend to the Canadian soldiers a measure of assistance towards their relief and comfort, and—WHEREAS such tribute cannot be translated more serviceably or appropriately than by a gift through the Canadian Red Cross, and it is the desire of the American Red Cross to afford substantial recognition of the sentiment of brotherhood and sympathy which pervades this country in this present crisis of human affairs."

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A NUMBER of physicians assembled lately in the medical room of the Toronto General Hospital to hear an address from Dr. E. E. Southard, director of the Boston Psychiatric Clinic, on the subject of "Mental Hygiene". The speaker pointed out the efforts made by science to trace the causes of feeble-mindedness in order to prevent or remedy it. There were seventeen causes to which feeble-mindedness could be attributed; many of these were theoretically and practically preventable. Less than five per cent. of mental weakness, he said, was caused by syphilis. The weak-minded could be

divided into three classes, cases of brain disease, cases of bodily disease, where the brain disease was incidental, and to hereditary causes. Referring to the intellectual power of an individual, it was not the size of the cells, he said, as much as the spread of the cells that mattered. An individual could do as well economically with one pound of brains as with three. The size of the brain varied with the size of the body. The phenomena of speech, he considered, was a neglected field of research, from the fact that the lower animals were not gifted with this power.

Dr. Clarke, former medical superintendent of the Toronto General Hospital, has become the chief executive officer of the newly-formed National Mental and Hygiene Association.

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At the convention of the American Surgical Association, held in Cincinnati, a most interesting discussion took place on the recent discovery of so-called bottled blood, known to the medical profession as citrate of blood, which has been used extensively, and with much success, on the battlefield. Sir Arbuthnot Lane told the delegates that in the recent German drive in Northern France, when the Third British Army was forced to retreat, thirty bottles of citrate of blood had been captured by the Germans. Major W. J. Mayo, of Rochester, announced that he had already enlisted one hundred persons of pure blood who will gladly offer their blood for treatment of American wounded. He said, however, that military surgeons preferred to take the blood of men who are slightly wounded behind the lines and are convalescing in hospitals there, rather than employ civilians for this purpose.



## The Association

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### ADDITIONAL RESOLUTIONS PASSED AT THE HAMILTON MEETING

Moved by Dr. R. A. Reeve, seconded by Dr. J. Halpenny, and carried,

*That, the various Provincial Medical Councils be respectfully requested to institute compulsory examinations in ophthalmology, including refraction work, and in oto-laryngology, if such are not already in force.*

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Moved by Dr. R. A. Reeve, seconded by Dr. D. J. Gibb Wishart, and carried,

*That the Medical Faculties of the Universities be respectfully requested to confer and, as far as possible, co-operate with a view to modifying the present curriculum so as to secure an arrangement of the subjects of study which will tend to insure a more symmetrical training of the prospective practitioner for his life work.*

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Moved by Dr. R. A. Reeve, seconded by Dr. A. D. Blackader, and carried,

*That the various Provincial Medical Councils be respectfully requested to make physical therapy based on a more thorough course in physics, an essential feature of the medical curriculum, and a practical examination necessary in this sub-department of therapeutics.*

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Moved by Dr. A. McPhderan, seconded by Dr. H. B. Small, and unanimously carried,

*That the members of the Canadian Medical Association view with favour the publication of the medical history of the Halifax Disaster by Professor D. Fraser Harris, of Halifax, and wish to state that in their opinion such a publication is most desirable.*

## FINANCIAL STATEMENT FOR 1917

FOR the information of our members we publish herewith the auditor's report for the financial year ending December 31st, 1917. The statement shows a slight increase in the amount received for fees. This is accounted for by the Montreal meeting, which in a measure offset the decrease in revenue, due to the reduction in the fee of members on service overseas. The balance of \$397.04 shown is creditable, when we consider the fact that the Association met all its financial obligations, including the payments of the interest on its indebtedness to the shareholders of the Montreal Medical Journal Co.

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The Chairman of Finance Committee,  
Canadian Medical Association,  
Montreal.

DEAR SIR:—

We beg to report that we have completed the regular audit of the Association's books and accounts for the year ending 31st December, 1917.

The attached statement shows the cash receipts and disbursements for the period.

Your books are in their usual good order; proper receipts and vouchers were on hand for all disbursements, and all our requirements as auditors were fully satisfied.

Yours faithfully,

E. B. SAVAGE & Co.

Montreal, P.Q., April 29th, 1918.

## CASH RECEIPTS AND DISBURSEMENTS

YEAR ENDING DECEMBER 31ST, 1917

## RECEIPTS

Balance in Bank—1st January, 1917.....		\$719.84
Annual Fees paid direct.....	\$1,904.75	
Annual Fees paid by draft.....	3,660.05	
		<hr/> 5,564.80
Reprints.....		382.83
Miscellaneous.....		286.06
		<hr/> \$6,953.53

## DISBURSEMENTS

Editorial Secretary's Salary.....		\$600.00
Refunds paid Provincial Societies:—		
New Brunswick.....	\$41.00	
Alberta.....	45.00	
Nova Scotia.....	33.50	
Saskatchewan.....	19.00	
Manitoba.....	44.50	
British Columbia.....	25.00	
Ontario.....	220.00	
		<hr/> 428.00
Journal Account:—		
Renewals and New Subscriptions.....	\$2,668.20	
Sundries.....	213.74	
		<hr/> 2,881.94
Reprints—(Murray Printing Co.).....		507.24
Clippings.....		52.00
Montreal Medical Journal Co. —		
Payments to Stockholders—\$5,000.00 at 6%.....		300.00
Bonuses to Officers.....		400.00
General Expenses:—		
Salary—Stenographer.....	810.00	
Postage and Sundries.....	232.00	
Stationery.....	52.65	
Travelling Expenses.....	41.70	
Audit Fees.....	20.00	
Sundries, including Annual Meeting Telephone, etc.....	230.96	
		<hr/> 1,387.31
Balance in Bank.....		397.04
		<hr/> \$6,953.53

Certified correct:

E. B. SAVAGE &amp; CO.,

Chartered Accountants.

MONTREAL, April 29th, 1918.

## Obituary

THE death of Lieutenant A. Murray Clare, M.D., killed in action, is a source of keen regret to all who knew him. Prior to enlistment, Lieutenant Clare was studying for his doctor's degree in the medical school of Winnipeg University. In 1915 he enlisted as a private. About a year later he was returned, when he resumed his medical course, and at the special "khaki" convocation of the university, in December, he received the degree of M.D. Shortly after he joined the C.A.M.C., and later transferred to the R.A.M.C. Immediately on his arrival in France he was despatched to the front line, attached to an ambulance corps, but shortly received the appointment of M.O. to the Durham Light Infantry. A thoroughly fine type of Westerner, Lieutenant Clare had won for himself a wide circle of friends throughout Winnipeg and the province, and, despite the brevity of his sojourn in France, he had already won distinction for his gallant conduct in the field.

ANOTHER life has made the great surrender in a great cause. Captain W. Hale, M.D., D.S.O., a medical officer of the 42nd Battalion, has been killed by accident at the Base hospital in France. He was a graduate of Queen's University, Kingston, and gave up a promising practice to serve his country in the present war.

YET another name in the Canadian medical profession is inscribed upon the honour roll. The death has been announced of Dr. W. E. Brown, of Gananoque Junction, Ontario. Dr. Brown was a member of the medical board of examiners stationed for several months at Cornwall under the Military Service Act. He had only been in France seven weeks when an enemy gas shell burst in the door of his post. He remained on duty several hours attending to the many wounded soldiers, but was finally removed to the casualty clearing station, where, after a severe illness of eight days' duration, he passed away. He was buried in the military cemetery at Perves. He was twenty-four years of age, a graduate of Queen's University, Kingston.

ANOTHER landmark in the Canadian medical profession, and a



very fine type of the old school, has passed away in the person of Dr. Robert E. Forbes, at Bonavista, Newfoundland, on June 8th. He was a man of splendid physique, well fitted for the onerous and hazardous work of attending to the needs of a northern settlement, when the only means of transportation was by open boat or by dog sled. His ministrations were eagerly sought and promptly given, his travel in early days taking in an extensive section of country. During the past thirty-five years he has built up a wide-spread practice. Dr. Forbes graduated at McGill University, and passed his final medical examinations with honours. At all times he took a lively interest in the political life of his country, being actuated by a desire to improve conditions generally, and the district of Bonavista in particular; but at no time did he deviate from an honest opinion, and his integrity could always be relied on. Until nearly a year ago Dr. Forbes enjoyed robust health, but being obliged last March to consult a specialist, he found that the end was inevitable, and bore his sufferings with that same calm that had stood him so well during his lifetime. He was a man of strong personality, a counsellor as well as physician to his patients, and he will be sadly missed. By his death in his sixty-ninth year, Bonavista loses one of its most highly respected citizens, and the medical fraternity one of its senior members and skilled practitioners.

DR. G. F. SLACK died at Farnham on June 5th. He graduated in Arts at McGill University, then went to London, England, and became a member of the Royal College of Surgeons. For a time he filled the position of house surgeon at Charing Cross Hospital. Returning to Canada thirty-five years ago, he built up a large practice in the Eastern Townships.

DR. H. J. HARRISON died at his late residence in Montreal, on June 25th.

## Correspondence

**T**HE following report of the action of the Ontario Medical Council on the question of the relations between the profession of Ontario and the Ontario Temperance Act has been received. The report was accompanied by a letter from the Registrar, Dr. H. Wilberforce Aikins, requesting that it be published in the JOURNAL. We are glad to be able to comply with Dr. Aikins' request.

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At the first session of the annual meeting of the Medical Council, which began on the twenty-fifth day of June, 1918, Dr. Arthur Jukes Johnson, seconded by Dr. Hardy, gave notice of motion that "at the next meeting we propose to ask for the appointment of a committee to consider and express the feeling of this council with regard to the relations between the profession and the Ontario Temperance Act."

At the session first next following, Dr. Johnson moved, seconded by Dr. Hardy, the motion of which notice had been given at the preceding session, "that a Committee composed of Sir James Grant, Dr. J. M. MacCallum, Dr. Eccles, Dr. Connell, Dr. Stewart, together with the mover and seconder be appointed to consider and report on the question as to the infringement of the Ontario Temperance Act by medical men.

This motion was carried.

On the same day this committee was called together immediately after the council rose, and after the question had been fully discussed in committee, the following report was presented.

Toronto, June 27th, 1918.

To the President and Members of the Council of the  
College of Physicians and Surgeons of Ontario.

GENTLEMEN:

I have the honour herewith to present the report of the special committee asked for two days ago in regard to the infringements of the "Ontario Temperance Act".

The Medical Council are of opinion that the giving of orders by medical men for the obtaining of alcoholic liquors is justified in any case in which the medical man is satisfied, "of his own knowledge" that the use of alcoholic liquor is necessary and proper for the treatment of the patient, and

That this Council would deprecate the giving of such orders upon any other ground whatever.

The Medical Council would request that the Board of License Commissioners take such steps as may be necessary to ensure that liquor sold on such orders be of proper quality and purity.

That means be taken by the Board of License Commissioners to investigate and deal drastically with all cases in which the provisions of the "Ontario Temperance Act" appear to be subverted.

All of which is respectfully submitted.

ARTHUR JUKES JOHNSON

This report was adopted subject to the addition of a clause moved by Dr. King and seconded by Dr. Stewart, "that the quantity of alcoholic liquor for internal use be limited to eight ounces."

When the above resolution was proposed, the charge against Dr. Moorhouse had not become public, but during the period of presentation of and passing by the Council of the resolution cited, a conviction had been recorded against Dr. Moorhouse in the police court, a full report of which appeared in the daily papers.

So insistent did this matter seem, that a motion was carried in the Council asking that the Executive Committee be directed to enquire into this case *ad interim* and later report to the Council. This became necessary for the following reasons:

1. If a complaint is made against a registered medical man asking the Council to take action therein, whether the initiative be taken by the Council or its Executive Committee, on the one hand, or upon the responsibility of any four members of the College, as attested by their written signatures, on the other, the complaint can only be investigated by the Discipline Committee of the Council.

2. Until the Discipline Committee has duly investigated the charge and reported its findings, the Council cannot act therein.

3. Notice must be given to the accused that he may have an opportunity of preparing his defence and of being heard before the Discipline Committee.

The action of the Council in referring this matter to the Executive Committee ensures instructions being given to the Discipline

Committee to enquire into this matter and to present their report to the Council at the earliest possible date that the Council may be prepared to deal with the whole matter.

It will be seen that these two motions while they are closely related, refer to separate conditions, the first motion refers to the way in which the profession feels towards the Ontario Temperance Act, the second one is a mandate of the Council that the Discipline Committee, a committee specially appointed for the purpose of making enquiry into all matters relating to members of the College, consider the case against Dr. H. H. Moorhouse as it appeared in the public prints and report as to their finding in the same.

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## Retrospect of Literature

### BULLETIN No. VII. OF THE INTERNATIONAL ASSOCIATION OF MEDICAL MUSEUMS

SPECIAL WAR BULLETIN OF THE AMERICAN AND CANADIAN SECTION.  
EDITED BY ALFRED SCOTT WARTHIN, MAUDE E. ABBOTT,  
CARL V. WELLER AND LOUIS GROSS

*Issued at Ann Arbor, U.S.A., and Montreal, Canada, May, 1918*

LACK of space forbids anything but the briefest mention of a few of the excellent articles in this number and limits us to the portion devoted to the war. This consists in the first place of what must be recognized as extremely timely technical information upon the preservation of war specimens in the form of editorial commentary upon the British Circular Memorandum upon this subject (issued in 1915, and here republished in full), and upon the great exhibition of British specimens of war recently held at the Royal College of Surgeons of England, together with a very valuable article by Mr. E. L. Judah, of McGill University, on "The Technique of the Preservation of War Material"; and, in the second place, of more than three hundred pages of concentrated material on all phases of the war of medical and surgical interest. By far the greatest value of this part of the work is to be found in the excellent bibliography attached to each article. This, in itself,



makes the volume almost a necessity for anyone wishing to make an extensive study of any of the war problems.

Industrial poisoning in munition works and aircraft factories is taken up at length, in reference to more than a score of different chemicals, by Dr. Alice Hamilton (Hull House, Chicago). The best managed factories have the highest percentage of cases of poisoning, due, undoubtedly, to the excellence of their medical supervision and consequent accuracy of diagnosis.

The chemicals most frequently causing serious injury to the workers are nitrogen oxide and T.N.T. in munition works and "dope poisoning" (from varnishes) in aircraft factories. The pathological features of T.N.T., are especially well worked out in an additional article by S. R. Haythorn, M.D.

The pathology of gassing has been carefully worked by Carl V. Weller, M.S., M.D. The many-sidedness of this question is seen when a complete review of the gases, which the different branches of the forces come in contact with, are mentioned. Obviously phosgene, chlorine, and mustard gas cause the majority of the casualties due to the enemy. There are, however, no inconsiderable number due to the poisonous fumes that the tunnellers meet in the mine, the transporter workers in the garage, and the gunners on board ship and in the gun-pit.

The subject of disinfectants in surgery is taken up by Bernard Fantus, M.S., M.D., in so far as the chlorine derivatives are concerned. Modern ideas of surgery suffered a severe blow, when the pet theory that a severely infected wound cannot be sterilized by disinfectants was successfully attacked by Carrel. The article is not clear enough on the relative advantages of the Wright and Carrel-Dakin treatments of infection.

The literature of trench nephritis is reviewed by Martin H. Fischer. The mass of information on this subject has been carefully sifted and he has come to certain definite conclusions. He thinks most of these cases are due to infection from a primary focus in the mouth, tonsils, pharynx, bronchial tubes or wounds. The great variance of the urinary findings he attributes to involvement of different portions of the kidney. The oedema, uremia high blood pressure of nephritis do not arise from the kidney but are simply associated symptoms.

Trench feet is treated at length by Louis B. Wilson of the Mayo Clinic. There is little in the article that is not familiar to the profession, and his conclusions have been accepted by the various armies for some time. The excellent bibliography makes this a valuable work of reference.

The venereal disease problem, as it is affected by the war, is taken up by J. H. Stokes of the Mayo Clinic. He handles this time-worn subject in a manner to interest all medical men. Our efforts at dealing with this question have been almost entirely wasted by allowing ourselves to confuse the moral and public health sides of the issue. It is so obvious that the profession must be content to educate first themselves and then the public on the medical side of the question, that it is surprising so much energy has been wasted. There is a widespread need for the education of the physician on the treatment and prophylaxis of these diseases.

All the European countries at war have taken up this question in a national way, but on this continent very little has been done. In the United States the propaganda campaign has been well organized, but the only national legislation has been to prohibit the sale of liquor and prostitution within five miles of a cantonment.

In England, France, Italy, Germany and Austria free treatment and diagnosis centres have been established broadcast in all the large cities. All have spent a great deal of time in educating both soldiers and civilians on the dangers of these diseases and on the best prophylactic measures to adopt. These countries have done little to eradicate prostitution except in Germany, where the infected ones are interned, and in England, where it is an offence to knowingly communicate a venereal disease to a soldier or sailor.

A. B. CHANDLER, *Capt., C.A.M.C.*

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THE PATHOLOGY OF THE SKIN LESIONS PRODUCED BY MUSTARD GAS (DICHLORETHYLSULPHIDE). BY A. S. WARTHIN, PH.D., M.D., AND CARL VERNON WELLER, M.D., Ann Arbor, Mich. *Journ. Lab. & Clin. Med.* (Vol. iii, No. 8, 1918, pages 447-449)

THE authors credit the discovery of this gas to Victor Meyer<sup>1</sup> (1886), who studied its chemical action experimentally on rabbits by bringing it into contact with the skin of the ears, and by causing inhalation of the vapour. The former action produced an intense inflammation leading to suppuration, while the vapor

produced a marked conjunctivitis, snuffles, purulent inflammation of the auditory passages, and finally death from a widespread broncho-pneumonia. Meyer claimed that even a cutaneous burn by the chemical would cause conjunctivitis and snuffles. The authors of this article have not been able to observe this effect.

Meyer<sup>2</sup> discontinued his experiments in 1887, owing to the disagreeable effects produced on his workers. From this time little attention has been given to the gas in the literature until its use in the present war in July, 1917.

The following symptoms are noticed among the victims of this gas: an initial tendency to sneeze, but no lacrimation, with a gradually increasing nose and throat irritation. After twelve hours there is a mucous discharge from the nose, painful inflammation of the eyes, with some pain in the head and a desire to vomit. Either blisters or an erythema is often visible on the face, neck, back, axillæ and thighs. In severe cases bronchitis and pneumonia may develop after forty-eight hours.

British army reports indicate that all the gassed cases suffered from conjunctivitis, 95 per cent. from throat and lung affections and 70 per cent. from skin burns. The latter are reported by Giraud<sup>3</sup> to be of two kinds, viz.: the early and late. The latter variety appear in from four to fifteen days and are light, while the former are seen after twelve hours, when the conjunctivitis is first apparent, and are always severe.

The previous pathological work on this subject has been only superficially done and has been confined to the gross lesions. This being the case, the work of the authors is all the more welcome. The results they disclose only deal with the skin burns as produced by the direct application of the gas to the skin of man and animals. The observations have been carried out in a thorough and painstaking way, while their descriptions are kept clear, lucid, and concise. The illustrations taken from photographs, both macro and microscopic, show clearly what they are intended to demonstrate.

On man the study was made of the effects produced by a drop of the chemical on the skin of the forearm. Photographs, with explanatory texts, are given of observations made at periods varying from one to seventy hours, and from four to forty-nine days. These indicate the following stages: erythema, œdema, vesicle formation, pustule, collapse of vesicle, eschar formation, beginning sloughing, separation of crust, and appearance of scar.

Microphotographs clearly showing the effects of the burn on

the different layers of the skin during the three stages are reproduced at the end of one half hour, after eighteen hours, and after thirty-six hours. The inflammatory and destructive changes are especially marked around the hair follicles, sweat and sebaceous glands. The necrotic process may continue for several days, though the slough usually separates by the nineteenth day. This is followed by an indefinite period of congestion and pigmentation.

The attempts to prevent the lesion have not been very fruitful unless done at once. They find that washing the spot at once with tincture of green soap will prevent any lesion. The authors failed to observe that water increases the intensity of the lesion as noted by some English and French writers. That this is the case, however, has been long confirmed by workers at the Front, who agree that the portions of the body where the most sweat occurs are the most likely to have severe burns. This fact is attributed to the resolution of the gas.

The observations made on animals were very similar to those on man. It was noticed that the edema was more intense and that no vesicle formation took place. Necrosis and slow healing were as noticeable as in man.

It is to be regretted that no mention was made of cardiac symptoms in the general treatise on the subject. Dyspnoea, palpitation and præcordial pain are very common symptoms of those exposed to this gas, and frequently delay for weeks a man's return to the trenches. The first aid treatment, too, might well have been stated. This has consisted for a long time in changing all the clothes of the soldier, bathing him with a solution of bicarbonate of soda and washing the mouth and upper air-passages with a similar solution. This treatment is carried out at an advanced dressing station.

A. B. C.

1. MEYER, VICTOR: *Ber. d. deutsch. chem. Gesellsch.*, 1886, xix, No. 3, 3259.
2. MEYER, VICTOR: *Ber. d. deutsch. chem. Gesellsch.*, 1887, xx, No. 2, 1729.
3. GIRAUD, ALBERT: *Jour. de méd. et de chir. prat.*, November 25th, 1917, lxxxviii, 890-895.



## Res Judicatae

AN APPRECIATION OF SIR JOHN RICKMAN GODLEE'S LIFE OF LORD LISTER.\* BY COLONEL JOHN STEWART, D.M.S. OFFICE, LONDON.

THIS is a book which should be on the table of every medical man, which should indeed be read by everyone who takes an interest in human history, in science, and in noble lives. For this is not only the authoritative biography of one of the greatest of Englishmen, and one of the greatest, if not the very greatest benefactor of his fellowmen, but it is also the authoritative account of the origin and development of his great work.

The author, who is a nephew of Lord Lister and a distinguished President of the Royal College of Surgeons, modestly undervalues his own qualifications for the task he undertook. He fears that personal relationship and prolonged association may have a disturbing effect on his sense of proportion in regard to the use of material. No one, especially none who knew anything of the "Chief", as his students loved to call him, can admit that he has erred here or loaded his book with unnecessary details of personal character, or conversation. Indeed, there are many who would gladly have more of this, and there are many old students who must thank Sir Rickman for words and phrases which bring back memories of the vanished hand and the voice that is still. Ah! such a voice! The fact is that there is no one living so well fitted to write this book, no one with a clearer view or firmer grasp of the essentials of Lister's work, no one with such a knowledge of the *vie intime* of the illustrious Master, in short, no one else could have written the book, or written it so well. This is one of the biographies that will endure. It is itself a work of art. The style is charming. We have here the light firm hand of the artist who knows his subject and his materials thoroughly. One cannot refrain from quoting a paragraph in which a description is given of one of the early experiments with catgut. "A young calf was secured; his father's museum on the first floor was turned into an operating room; chloroform was given and the carotid artery was tied in two places with catgut. . . I have a vivid recollection of the operation, the first at which I

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\* "Lord Lister," by Sir John Rickman Godlee, Bt., K.C.V.O., M.S., F.R.C.S.

assisted him; the shaving and purification of the part, the meticulous attention to every antiseptic detail, the dressing formed of a towel soaked in carbolized oil; and my grandfather's alabaster Buddha on the mantelpiece contemplating with inscrutable gaze the services of beasts to men" (p. 231).

The glimpses given of Lister's relations with the distinguished savants of his time, notably with Pasteur, of his methods of work, of his holiday pastimes and travels, of his earnestness and his strenuous pursuit of perfection in his methods, are almost tantalizing because they are so few. But the book must describe the work as well as the man.

To many, even to many medical men, Lister's work is known only as the development of antiseptic surgery, the new surgery, which by whatever name it may be called was a revelation and a revolution more beneficent to mankind than can well be estimated. It is no exaggeration to say that through the adoption of his principles millions of lives and incalculable myriads of limbs have been saved, which, under the surgery of fifty years ago, would have been lost. But the success of this achievement had behind it years of patient investigation into physiological and pathological questions, and we could wish that a volume might be published containing the substance of Lister's researches on the early stages of inflammation, the coagulation of the blood, and the influence of the nervous system. It would not be too much to say that these writings might be taken as the *Principia* of surgery, establishing for surgery, and indeed for medicine in the wide sense, what the genius of Newton did for physics.

There has been no satisfactory definition of genius. For some, genius is a capacity for hard work. Here was hard work, constant thought, unrelaxing effort, the devising of new methods, the invention of apparatus, strenuous labour of the day carried on into the night and through the night. But many an honest mediocrity has toiled bravely and patiently, and at the end, far from having won the homage and gratitude of his fellows, has had to confess that he had spent his life *operose nihil agendo*. Mere capacity for hard work is not a satisfactory definition of genius. Rather is genius a spiritual gift, something of the divine and infinite, and how then can it be defined? In the genius there is not only a power of insight and a grasp of essentials beyond his fellows, but there is an elevation of thought to planes beyond the thoughts of other men, a soul privileged to move serenely and at home in worlds not yet realized by others. It is splendid, but it is a lonely splendour.

This was the case with Lister. He was very much alone. For some years his followers were few, chiefly personal relatives, a few of his old fellow-students, and his own house surgeons and dressers. He was not seldom depressed by the apathy, the incredulity and even the hostility with which his ideas were received. This scepticism and antagonism are almost inexplicable to us at the present day. Lister was the unregarded prophet in his own country. With very few exceptions the leaders of the profession in Britain, if they did not ignore him, opposed him. It was among the juniors, the assistant surgeons and house surgeons that any interest was shown. This may have been partly due to the increasing influence of physiology and pathology in the medical schools. One is strengthened in this conviction by the fact that Lister's theory and practice were more favourably received in Germany than elsewhere, for at this time Germany led the world in physiological and pathological studies, and especially in original research. At a time when an unabridged gulf of hate and horror has opened between the Germany that is and ourselves, one looks back with inexpressible sadness to the Germany that was, and its reception of the teaching of the English surgeon. There can be no doubt of the admiration and enthusiasm of his German colleagues, their generous tributes to his genius and their testimony to the benefits resulting from the adoption of his methods. And yet, to many who know the paths by which Lister sought perfection, the intuition with which logical conclusions led to severely simple and practical ends, it is a curious reflection that the German type of mind, pursuing ideals with an inexorable logic but with an incorrigible disregard of fundamental principles, has to a great extent obscured Lister's teaching and paralyzed its practice; just as, working in another sphere, it has led Germany to the abyss. One of the most interesting chapters in the book is that on "Antiseptic and Aseptic Surgery", in which the author describes the simple methods of Lister, and the elaborate ritual of the "aseptic" practice of to-day.

Probably the majority of the operating surgeons of to-day were born since the surgical world accepted Lister's teaching. If to any of them this description of Lister's own practice should seem incredibly crude and inefficient, let them remember that these were the methods which revolutionized surgery, and convinced a long doubting profession. It is probably the vanishing few who knew Lister and his work, and practised his principles who will assert with the author that "it will be a good day for surgery when a return is made to pure Listerian methods, when someone rediscovers what

Lister taught, and preaches again the doctrine which Lister preached." To champion this thesis at this time would lead to tedious and sterile argument, but this much may be said at this time: in many cases the first dressing seals the wounded soldier's fate. The aseptic operating theatre cannot be brought into the front line, but Lister's principles and Lister's practice can be applied in a barn, in a stable, in a dug-out, or in the open field."

But the author's attitude is not polemic. That is not the object of the book.

The volume, a large octavo, is beautifully printed, and has a very full index. A word must be said for the illustrations, chiefly portraits, which are of unusual excellence. The portrait of Lord Lister chosen for the frontispiece is from an amateur photograph by his friend, Mr. Bickersteth, F.R.C.S., of Liverpool, and is an admirable likeness of him as he was in the later years of his active life.

All who read these memoirs must surely be conscious of a longing to know more of the man himself, who achieved so much. They would fain know something of the hidden springs of character and conduct, the principles which guided the inward thought and its outward expression. It is perhaps one of the characteristics of the age in which we live that men of deep religious feeling are so often averse from discussing their beliefs, unless it may be, with intimate friends. There is such a general atmosphere of irreverence, scepticism and mocking cynicism that a spirit "benign and proud and shy" shrinks from exposing its deepest and truest affections, and the author, in his short preface, indicates some of the reasons why he has not dwelt more fully on the inner life of his illustrious relative. There can be no doubt that the home influences surrounding Lister as a boy, the cheerful gravity and simplicity of Quaker Christianity, moulded his character and stamped it with the sweet reasonableness and high sense of duty which were so conspicuous throughout his life. His boyhood was active and happy in a home where "there was never any question that life was a gift to be employed for the honour of God and the benefit of one's neighbour". He owed much to his father, a very remarkable man, of whom we have interesting and vivid glimpses in the early chapters, a man of unusual scientific attainments especially in optics.

In a speech in Toronto in 1897, which some readers of the JOURNAL may remember, Sir Michael Foster made a happy reference to Lister's Quaker origin. "In early life Lister belonged to a



society the members of which call all men Friends, and now in turn, because of his inestimable beneficence and service to mankind, all men the world over call him Friend."

He shared with his intimate friends, all of them men of unusual intellectual power and notable achievement, a childlike faith in the Christian religion. In the following quotation from a graduation address delivered in 1876, which Sir Rickman has taken as the title page "motto", we see, as through a window, into the pure, simple, and reverent spirit of Lister: "If we had nothing but pecuniary rewards and worldly honours to look to, our profession would not be one to be desired. But in its practice you will find it to be attended with peculiar privileges; second to none in intense interest and pure pleasures. It is our proud office to tend the fleshly tabernacle of the immortal Spirit, and our path, if rightly followed, will be guided by unfettered truth and love unfeigned. In the pursuit of this noble and holy calling I wish you all God-speed."

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## Miscellany

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### News

#### MARITIME PROVINCES

THE Convocation in the Faculties of Medicine and of Dentistry, of Dalhousie University, was held on May 30th, in the MacDonald Memorial Hall of the library at Studley. The special prize for excellence in histological technique was awarded to Albert Clay Hayford, a student of dentistry; the Dr. Lindsay prize for distinction in at least two subjects of the second professional examinations was awarded to Daniel William Hoar. Professor Cameron's prize for the student of first year making highest marks in practical anatomy was won by John Osler MacLean. The students were addressed by Dr. Andrew Croll, F.R.C.S., formerly of Saskatoon, who is now in charge of Camp Hill Hospital, Halifax, after being in charge of a large base hospital in France for two years. After congratulating the university on its fiftieth anniversary in medicine, Dr. Croll referred to the progress of surgery during the past fifty years, and particularly to the achievements of the French, British, and American surgeons. A few years ago, he said, it was the fashion to study Teutonic surgery as a post-graduate course, but

while one learnt a great deal in pathology from Germany, and in painstaking methods of diagnosis, one did not go to them to learn of surgical discoveries. He reminded the graduates that there was a personal factor in treatment, and that the application of personality in the sick room should form one of the recognized subjects of the medical curriculum. The German physician did not know how to treat the individual, and recognized only the disease. He asked them to think of the *quality* of their work rather than the quantity: in surgery especially, if working against time, the quality of their work would suffer. He paid a warm tribute to the Army Medical Corps, commenting not only on the services of the doctors, but of the nursing sisters, the stretcher bearers, and the orderlies.

As all men worth while in the medical world were helping out in the titanic struggle, and post graduate work was impossible at the present time, Dr. Croll advised the graduates to join the Army Medical Corps, where they would learn, at least, methods of exactitude; and when the conflict was over, they would have peace of mind when they reflected that they had "played the game" and done "their bit" during the great war.

### ONTARIO

About one hundred and seventy-five medical men from all parts of Western Ontario attended the inaugural clinic of the Western Ontario School of Medicine conducted at Victoria Hospital by Dr. Thomas McCrae, head of the Jefferson College of Medicine, Philadelphia, and brother of the late Lieutenant-Colonel John McCrae. Dr. Thomas McCrae was for some time associate professor of medicine at Johns Hopkins University, and he is associate author with Sir William Osler of a "System of Medicine", "Cancer of the Stomach," and other leading medical works. The clinic exemplified the treatment, according to the latest methods, of disease of the heart, kidneys, joints and blood. The next clinic will probably be held in November. It is planned to hold four clinics a year, and to bring to London the highest and most distinguished medical authorities of international reputation, the design being to keep up with the most up-to-date developments in medical science without leaving home.

The Act for the Prevention of Venereal Diseases passed at the last session of the Ontario Legislature, went into force on July 1st.

Drastic measures will be enforced. The medical health officers have been granted considerable powers. It provides that any person under arrest or in custody can be examined if the officer has reason to believe that the person is suffering from some form of venereal disease; if found infected, this person can be detained and isolated until he has been medically treated. The regulations also authorize the medical health officer, if credibly informed that a person resident in the district is infected or is liable to infect other persons, to give notice in writing to such person requiring him to consult a legally qualified practitioner, and to procure a certificate that he is not suffering from the disease. If such certificate is not given, another doctor can be appointed to examine and report on the matter. The medical health officer is empowered to enter any house for the purpose of making inquiry or investigation with respect to the health of any person therein, and may also order their removal to a hospital. This Act is designed for the protection of innocent persons, especially women, who have been the chief sufferers from the insidious spread of this horrible disease. The Provincial Board of Health has issued a pamphlet containing the regulations respecting the treatment of venereal disease for the guidance of medical practitioners. Severe penalties are enforced for the violation of these regulations.

DR. H. B. ANDERSON was elected vice-president of the American Therapeutic Society at the recent meeting held in Richmond, Va.

#### MANITOBA

THE Manitoba Medical Association held its annual session in Winnipeg, June 20th and 21st. The association placed itself on record as being convinced that the restriction placed on the use and sale of alcohol in the province has resulted in the physical, moral and economical betterment of the people. The programme was largely clinical in nature, and most of the meetings were held in various city hospitals, including the Manitoba military hospital, at Tuxedo. One of the chief items under discussion was the control of venereal diseases.

Nurses in Manitoba, Alberta, Saskatchewan and Ontario are authorized by law to affix the letters R.N. to their name, provided they have been trained and graduated from an authorized hospital.

and have passed the examinations deemed necessary by the council which passed the act.

#### ALBERTA

DONATIONS to the Calgary hospitals were trebled the second year after the city began to elect fifty per cent. of the hospital trustees, and again trebled the third year. The financial reports of the Hospital Board show that donations of \$317 were received in 1914, \$1,035.35 in 1915, and \$3,480 in 1916. This is an encouraging indication that there is no falling off in the popularity of hospitals as a result of increased public control.

DR. F. G. SHEPHERD, late Dean of the Faculty of Medicine of McGill University, has just completed an investigation into the prevalence of goitre in Alberta for the Commission of Conservation, representations having been made to the Commission that the disease was becoming unduly prevalent in the province.

#### SASKATCHEWAN

VOTING for the vacancies on the senate of the University of Saskatchewan resulted in the election of the following officers: College of Physicians and Surgeons, Dr. H. A. Stewart, of Saskatoon; College of Dental Surgeons, Dr. W. H. Falloon, of Saskatoon; Pharmaceutical Association, Robert Martin, of Regina; Battleford district, Dr. Stanley Millar, of Battleford. The College of Physicians and Surgeons, the College of Dental Surgeons, and the Pharmaceutical Association have their first representative on the senate of the University. Provision was made for such representation at the meeting of the senate on convocation day of this year.

TENDERS are being called for alterations and additions to the power plant at the Provincial Tuberculosis Sanitorium, Fort Qu'Appelle. The improvements are expected to cost about \$25,000, and will include extra water mains, extra electrical equipment, which include a new boiler, two steam engines, pole lines and a new system of water lines for fire protection.

IN order to meet the needs of the Prairie provinces, it is the



purpose of the Victorian Order of Nurses to establish similar institutions in the West. The Order has four training centres in Canada, Montreal, Ottawa, Toronto, and Vancouver. Miss Russell, the assistant inspector of the Order for Canada, on her recent tour through Saskatchewan remarked on the shortage of workers in the district and the necessity of additional appointments. Those who take the V. O. N. course must be fully qualified nurses to begin with. The course will last six months and consists of instruction in district work, school nursing, child welfare, social service and public health. The nurses who take the course will be Westerners, fitted to take up the work on the prairies where it is so vastly needed.

#### ARMY MEDICAL SERVICES

LIEUTENANT-COLONEL ANDREW CROLL, F.R.C.S., formerly of Saskatoon, has been appointed to take charge of surgery at Camp Hill Military Hospital, Halifax, and to be consulting surgeon to Military District No. 6. Dr. Croll went to France early in 1915, was raised to the rank of Lieutenant-Colonel and became Chief of the Surgical Service of No. 2 Canadian General Hospital, France, in 1916, which post he held until his return to Canada in February, 1918.

CAPTAIN CHARLES E. PRESTON, of the Canadian Army Medical Corps, and a prominent orthopaedic physician, was among those wounded by the German bombing raid on No. 1 Canadian Base Hospital. Captain Preston was wounded in the scalp by a bursting bomb during the raid, and is now in a London hospital, where he is recovering. He went overseas in 1916, was stationed at the base hospital where he was wounded, and was one of the last surgeons to leave the building as the bombs from the German airplanes burst around it. He is a graduate of McGill University, Edinburgh University, and the New York Rupture and Cripple Hospital.

LIEUTENANT B. E. HAWKE, R.A.M.C., a formerly well-known Toronto physician, has won promotion for his good work in hospital at Epsom, England; he has been appointed examiner of a travelling medical board, with headquarters at Tunbridge Wells. He is now engaged in visiting hospitals and camps reclassifying soldiers.

MAJOR A. S. GORRELL, A.D.M.S., Military District No 12, since

the district was organized, is to be given rank of Lieutenant-Colonel, and will be special senses consultant in diseases of the eye, ear and nose, and throat.

COLONEL EVAN G. DAVIS, C.M.G., has been appointed A.D. M.S., effective from July 1st.

LIEUTENANT-COLONEL JOSEPH HAYES has been awarded the Distinguished Service Order. He was mentioned in despatches for the second time, May 28th, for distinguished and gallant service, and again on April 7th. Colonel Hayes went overseas as medical officer of the 85th Nova Scotia Battalion; six months ago he was transferred to the fourth divisional train company, and a month ago was promoted senior medical officer, central group, Canadian Forestry.

LIEUTENANT-COLONEL MONTAGUE, graduate of 1904, who has been awarded the Distinguished Service Order and Military Cross, is on the divisional headquarters staff in France.

CAPTAIN FRANK HASSARD, a graduate of Toronto University in 1910, wounded in April, 1916, won the Military Cross in July, 1916, is now attached to the Field Ambulance of the Indian Cavalry.

LIEUTENANT A. S. MALCOLMSON, a graduate in medicine of Toronto University, has been mentioned in despatches.

THE following list contains the Canadians named in Sir Douglas Haig's despatch of April 7th, as worthy of special mention.

*Army Medical Corps.*—Captain J. E. Barry, Lieutenant-Colonel G. J. Boyce, Captain H. McL. Cameron, Lieutenant-Colonel D. Donald, Lieutenant-Colonel A. S. Donaldson, Colonel J. M. Elder, Major A. W. M. Ellis, Lieutenant-Colonel A. L. C. Gilday, Temporary Lieutenant-Colonel J. N. Gunn, Lieutenant-Colonel J. A. Gunn, Temporary Captain F. R. Hahhard, M.C., M.B.; Lieutenant-Colonel J. Hayes, Lieutenant-Colonel D. P. Kappele, Quartermaster and Honorary Captain J. E. Lawrence, Major (Acting Lieutenant-Colonel) H. H. Moshier, Major G. S. Mother-sill, D. S. O. Lieutenant-Colonel A. C. Rankin, Captain W. A. Richardson, Temporary Major (Acting Lieutenant-Colonel) E. R. Selby, Lieutenant-Colonel J. Stewart, Major G. S. Strathy, Captain S. J. Streight, Honorary Captain and Quartermaster J. E. Tullock,

Captain W. C. Walsh, Captain H. W. Whytock, Temporary Captain H. G. Young, D.S.O. Private S. Fairham, Private W. J. Pettengell, Staff-Sergeant A. J. Pickman, Quartermaster-Sergeant G. E. Rogers, Corporal J. Tait, Corporal O. E. Thomas, Staff-Sergeant E. T. Westby.

*Nursing Service.*—Sister Miss L. A. Brady, Sister Miss E. E. Carpenter, Sister Miss C. A. Donnelly, Sister Miss M. J. Fortescue, Matron Miss M. Goodeve, Sister Miss E. MacL. Gordon, Sister Miss R. Hally, Sister Miss S. M. Jenkins, Sister Miss W. M. Lampher, Sister Miss M. MacDonald, Sister Miss S. Robertson, Matron Miss E. M. Wilson.

CAPTAIN H. J. WATSON, M.D., of University of Manitoba and Toronto, has been appointed Major in the United States Medical Reserve Corps. He was formerly in the C.A.M.C.

THE official list of recent promotions in the C.A.M.C. are as follows:

Colonel (Temporary Surgeon-General) G. L. Foster, C.B., to be Temporary Major-General.

Temporary Lieutenant-Colonel J. G. Adami to be Temporary Colonel.

Temporary Captains to be Temporary Majors: W. T. Ewing, J. E. McAskill, M.C.; F. E. Watt, N. C. Sharp, R. G. Armour, A. A. MacKay.

Temporary Major H. L. Harris to be Temporary Lieutenant-Colonel.

Temporary Captain (Acting Major) W. C. Laidlaw to be Major.

Temporary Captains (Acting Majors) R. J. Gardiner, M.C.; G. W. Hall; H. W. McGill, M.C., to be Temporary Majors.

Lieutenant-Colonel H. M. Robertson to be Temporary Colonel.

## CASUALTIES

### *Killed in Action*

Lieutenant A. Murray Clare, C.A.M.C., of Winnipeg

### *Killed at Base Hospital*

Captain W. Hale, C.A.M.C., of Gananoque, Ontario

*Killed in Air Raid on Hospital*

Nursing Sister G. M. Wake, C.A.M.C., of Victoria

*Died of Wounds*

Dr. W. E. Brown, C.A.M.C., of Gananoque Junction, Ontario

*Wounded*

Captain C. E. Preston, C.A.M.C.

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### Book Reviews

MEDICAL SERVICE AT THE FRONT. By LIEUTENANT-COLONEL JOHN McCOMBE, C.A.M.C., and CAPTAIN A. F. MENZIES, C.A.M.C. Publishers: Lea and Febiger, Philadelphia and New York.

THIS little book has been dedicated to the Right Honourable Sir Robert Borden, G.C.M.G., and contains a foreword by Surgeon General J. F. Fotheringham, D.G.M.S., Ottawa. It should fill a long-felt want owing to the clear and accurate manner in which it is written, and the plentiful assortment of illustrations showing the different formations and the details of construction of the medical posts.

The arrangement of the book follows the position of the different units as regards the Front—thus we find first a description of the combatant troops, then the Regimental Medical Officer, Field Ambulance, Assistant Director of Medical Services, the Corps Medical Personnel, the Cavalry Medical Units, and finally the Casualty Clearing Station.

The authors have not divided up the book according to the importance of the different subjects, as only fifteen pages are devoted to the Regimental Officer and ten to the Casualty Clearing Station while fifty-seven are given to the Field Ambulance. This allotment is out of all proportion to the importance of the work, as, with efficient and well trained Regimental Medical Officers the Field Ambulances should be merely a connecting link joining the Casualty Clearing Station to the Front and treating cases too



trivial for hospital care. In other types of warfare the relative importance would be again changed.

This point has been emphasized owing to the general impression that any medical officer will do for regimental duty. This is no doubt true in peace time, but in the trenches the varied duties of a medical officer call for a man of wide experience, not so much as a scientific physician but as a student of human nature.

This book should be in the hands of all medical officers who have not seen service in the trenches and should be studied by all medical officers proceeding overseas.

A. B. C.

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### Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

**DIETOTHERAPY.** BY WILLIAM EDWARD FITCH, M.D., Major Medical Reserve Corps, U.S.A., formerly lecturer on surgery, Fordham University School of Medicine, Vol. I.—CHEMISTRY AND PHYSIOLOGY OF DIGESTION CLASSIFICATION AND ANALYSIS OF FOODS. Vol. II.—NUTRITION AND DIET IN HEALTH. Vol. III.—NUTRITION AND DIET IN DISEASE. Publishers: D. Appleton & Company, New York and London, 1918.

**MEDICAL DISEASES OF THE WAR.** BY ARTHUR F. HURST, M.A., M.D., F.R.C.P., temporary major, R.A.M.C.; physician and neurologist to Guy's Hospital. Second edition, revised and enlarged. Price, 12s. 6d. net. Publishers: Edward Arnold, 41 Maddox Street, London, W., 1918.

**THE UNGEARED MIND.** BY ROBERT HOWLAND CHASE, A.M., M.D., physician-in-chief Friends Hospital (for Mental Diseases). 338 pages, illustrated. Price, \$2.75. Publishers: F. A. Davis Company, Philadelphia, 1918.

**MEDICAL CONTRIBUTIONS TO THE STUDY OF EVOLUTION.** BY J. G. ADAMI, M.D., F.R.S., F.R.C.P. 361 pages, with illustrations. Publishers: Duckworth & Co., 3 Henrietta Street, Covent Garden, London, W.C., 1918.

**SURGERY OF THE SPINE AND SPINAL CORD.** BY CHARLES H. FRAZIER, M.D., Sc.D., professor of clinical surgery and surgeon to Hospital of University of Pennsylvania; with the collaboration of ALFRED REGINALD ALLEN, M.D., associate in neurology and neuropathology, University of Pennsylvania, Philadelphia. 922 pages, with illustrations. Publishers: D. Appleton Company, New York and London, 1918.

**THE ACTION OF MUSCLES, INCLUDING MUSCLE REST AND MUSCLE RE-EDUCATION.** BY WILLIAM COLIN MACKENZIE, M.D., F.R.C.S., F.R.S., member of the Council of the Anatomical Society of Great Britain and Ireland, and of the Staff of the Military Orthopædic Hospital, Shepherd's Bush, London. 249 pages, with illustrations. Price, 12s. 6d. net. Publishers: H. K. Lewis & Co., 136 Gower Street, London, W.C., 1918.

**SYPHILIS AND PUBLIC HEALTH.** BY EDWARD B. VEDDER, A.M., M.D., lieutenant-colonel, Medical Corps, United States Army. Published by permission of the Surgeon-General United States Army. 300 pages. Price, \$2.25. Publishers: Lea & Febiger, Philadelphia and New York, 1918.

**ANIMAL PARASITES AND HUMAN DISEASE.** BY ASA C. CHANDLER, M.S., Ph.D., instructor in zoology, Oregon Agricultural College, Corvallis. 533 pages, with illustrations. Publishers: John Wiley & Sons, New York, 1918.

**MODERN OPERATIVE BONE SURGERY, with Special Reference to the Treatment of Fractures.** BY CHARLES GEORGE GEIGER, M.D. 273 pages, with 120 illustrations. Price, \$3.00 net. Publishers: F. A. Davis Company, Philadelphia, 1918.

**MEDICAL SERVICE AT THE FRONT.** BY LIEUTENANT-COLONEL JOHN McCOMBE, C.A.M.C., and CAPTAIN A. F. MENZIES, M.C., C.A.M.C. Price, \$1.25. Publishers: Lea & Febiger, Philadelphia and New York, 1918.

**LESSONS FROM THE ENEMY. HOW GERMANY CARES FOR HER WAR DISABLED.** BY JOHN R. McDILL, F.A.C.S., major, medical reserve corps, U. S. Army. Price, \$1.50. Publishers: Lea & Febiger, Philadelphia and New York, 1918.

- A DIABETIC MANUAL FOR THE USE OF DOCTOR AND PATIENT. BY ELLIOTT P. JOSLIN, M.D., assistant professor of medicine, Harvard Medical School. 179 pages, with illustrations. Publishers: Lea & Febiger, Philadelphia, and New York, 1918.

## Canadian Literature

### ORIGINAL CONTRIBUTIONS

*The Canadian Journal of Medicine and Surgery*,  
May, 1918:

Pernicious anæmia with special reference to  
its surgical management . . . N. M. Percy.

*Le Bulletin Médical de Québec*, February, 1918:

Blenorrhagie psychique . . . G. Ahern.  
La propagande qui s'impose . . . L. F. Dubé.

### No. 1 CANADIAN GENERAL HOSPITAL CLINICAL SOCIETY

*Meeting January 10th, 1918*

PRESENT the following officers: Colonel Simpson, president; Lieutenant-Colonel Gunn; Majors Gwyn, Harrison, Ower, Ruttan, MacDermot; Captains Baragar, Bunn, Forsyth, Fraser, Howes, Inglis, Kenny, Lauchland, Logie, MacKay, McAskill, Moffatt, Swan, Wade, Wark, and a number of visitors, including Sir John Rose Bradford, consulting physician, Etaples.

#### *Programme*

*Case No. 1. Pathological Specimens. Lungs from case of acute purulent bronchitis. Demonstrated by Major Ower.* Captain McAskill gave an outline of the case from which the specimens were taken.

*Case No. 2. Case presenting symptom-complex of Banti's disease. Demonstrated by Captain Logie.*

The family history as read showed nothing of importance. In the physical examination it was noticed that the mucous membrane was of a pale colour, and the skin dirty white. The patient was running a slight intermittent fever. The pharynx

was unusually clear. There was definite swelling of the abdomen in the left upper half, the notch of which can be felt, and there is a prominent boss towards the epigastrium. No heart murmur. Analysis of the urine shows well marked nephritis; examination of blood showed well marked secondary anæmia. Red blood cells, 3,200,000; white blood cells about 5,000; hæmoglobin 60 per cent. Differential count normal.

A second examination made to-day, together with urinalysis, confirms the condition found in the first examination. Wassermann test was positive, but there was no history to suggest a venereal condition.

Sir John Rose Bradford in discussing the case, stated that he thought, from the information given by Captain Logie, that probably it was one of Banti's disease. The blood was typical of the disorder. A point brought out in the course of Sir John's remarks was, that there is a small group of cases seen in France resembling distantly this patient, accompanied by enlargement of the spleen, profound illness lasting several months, and in many cases followed by complete return to health, and disappearance of the splenic tumour. Superficially the cases approached one of the stages of what is known as Banti's disease.

*Case No. 3. Surgical Cases.* Major Harrison, Captain Lauchland.

(a) Captain Lauchland presented a case of osteomyelitis (chronic), showing bony changes by x-ray. Patient was quite able to walk.

(b) Major Harrison stated that his purpose in presenting his cases, was with a view to bringing to notice the subject of I. C. T.'s, and of showing that it is a matter of greater interest than is generally shown. He mentioned that there is a wastage of man power caused by the way in which cases were usually treated, which permits of men being kept in hospital for some time; whereas if better attention and treatment were given, the patients would be enabled to return to the line in a much shorter time.

Major Harrison named six different kinds of these cases. Colonel Simpson, Colonel Gunn, Major Gwyn and Captain Kenny discussed the cases.

An interesting case of atrophy and spastic condition of the leg presenting difficulties in diagnosis, was presented for diagnosis by Captain Richmond.

The meeting then closed.



